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BETTER FRUIT

VOLUME VIII

FEBRUARY, 1914

NUMBER 8

Special Edition—Marketing Opportunities, Methods and Financing

**"American
Fruits in
Foreign
Lands."**

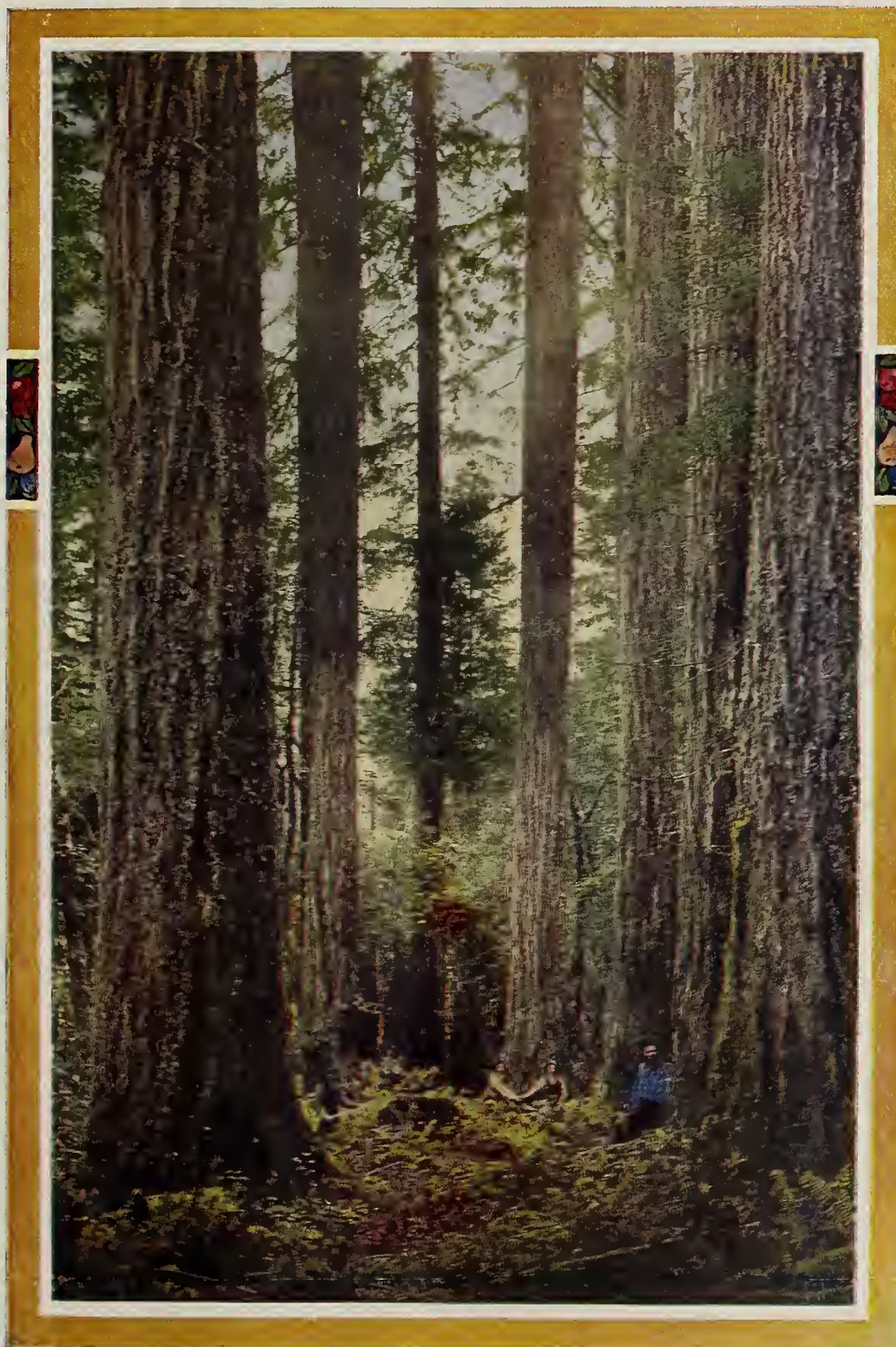
—H. N. Gilbert

**"Influence of
Panama
Canal on
Northwest-
ern Fruit
Industry."**

—J. N. Teal

**"Insects and
Diseases
and Their
Control."**

—J. H. Wright



**"Marketing
Fruit from
Producer's
Standpoint."**

—Hon. H. B. Miller

**"Apple
Market
Investiga-
tions."**

—Hector
McPherson

**"Marketing
Fruit from
Banker's
Standpoint."**

—Edward
Cookingham

GIANT FIRS

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Many of the famous orchards of the Northwest have been set on land originally covered by forests of immense trees like these which indicates the wonderful fertility of the soil.

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

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Single Copy 10 Cents



Kimball Cultivator at Work in Orchard

The Best Implement for Successful Orcharding is the Kimball Cultivator

The Great Weed Exterminator

Excels every known implement for maintaining a dust mulch and for pulverizing and leveling the soil.
Ninety per cent of the orchardists of the Hood River, Oregon, district use this machine.

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walking out in the open. The Kimball makes a wide sweep at a time, and eight to ten acres of orchard can be cultivated per day. Thousands of Kimball cultivators are now in use, and every person who has one recommends it.

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It not only preserves the moisture, but destroys the hiding places of insects, such as curculio, which are often serious orchard pests. Apples grown in cultivated orchards ripen later, and consequently keep longer. They are of larger size and usually smoother.

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Retail Price Schedule of Kimball Cultivators

	Price
No. 4. 4½ feet, 6 blades, weight complete 70 lbs.....	\$13.50
No. 5. 5½ feet, 7 blades, weight complete 85 lbs.....	15.00
No. 6. 6 feet, 8 blades, weight complete 100 lbs.....	17.50
No. 7. 7 feet, 9 blades, weight complete 115 lbs.....	18.50
No. 8. 8½ feet, 11 blades, weight complete 125 lbs....	20.00
No. 9. 10 feet, 13 blades, weight complete 140 lbs....	25.00
No. 10. 12 feet, 15 blades, open center, weight complete 160 lbs.....	22.50
No. 11. 12 feet, 15 blades, weight complete 185 lbs....	30.00
No. 13. 18½ and 19 feet, 23 blades, gangs fully rigged, weight complete 300 lbs.....	47.50
Extra Frames \$1.00 per foot; weight 10 lbs. per foot.	
Extra Blades \$1.50 each; weight 5 lbs. each.	

Note prices on various sizes quoted below. Send in your order at once, or write by return mail asking for booklets and particulars. All quotations are f.o.b. The Dalles, Oregon, but we will arrange to have a carload in some Eastern city for the spring of 1914, so that shipments may be made direct from that point.

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W. A. JOHNSTON
The Dalles, Oregon



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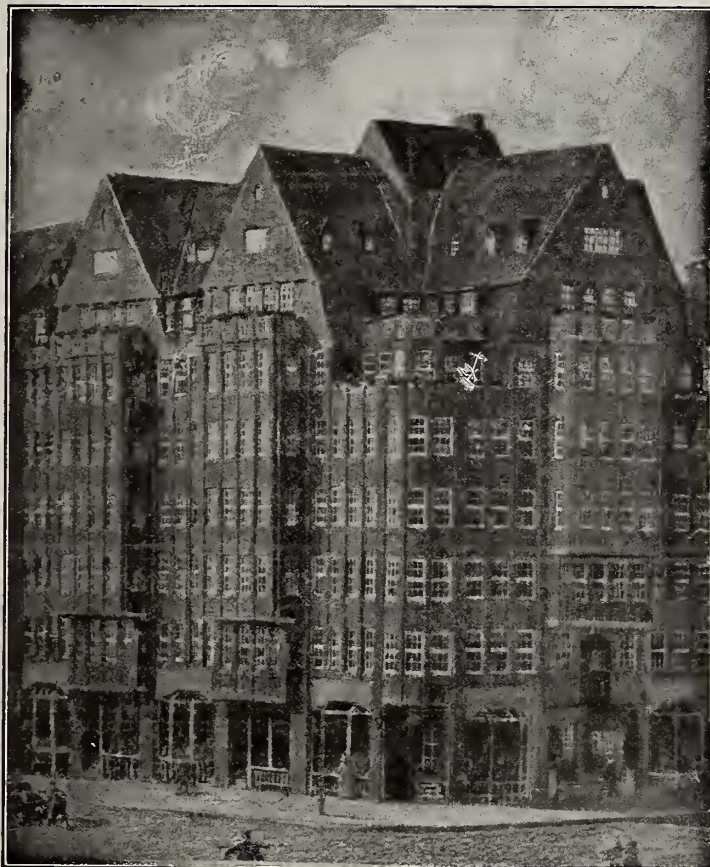
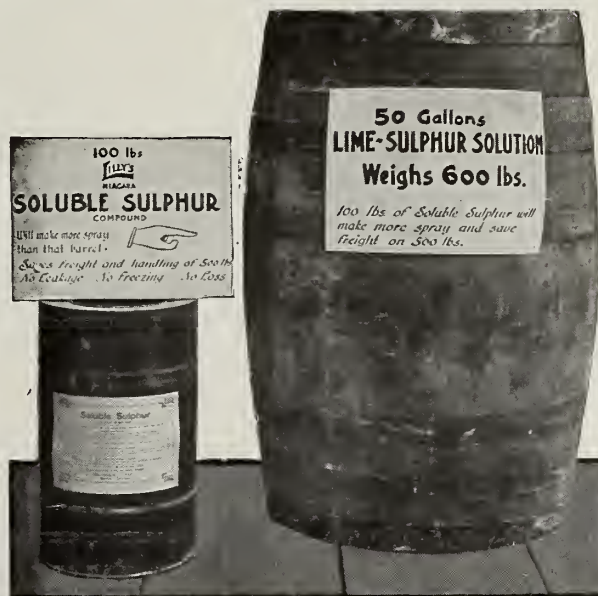
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If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

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Oldest bank on the Pacific Coast

PORTLAND, OREGON

Capital fully paid \$1,000,000

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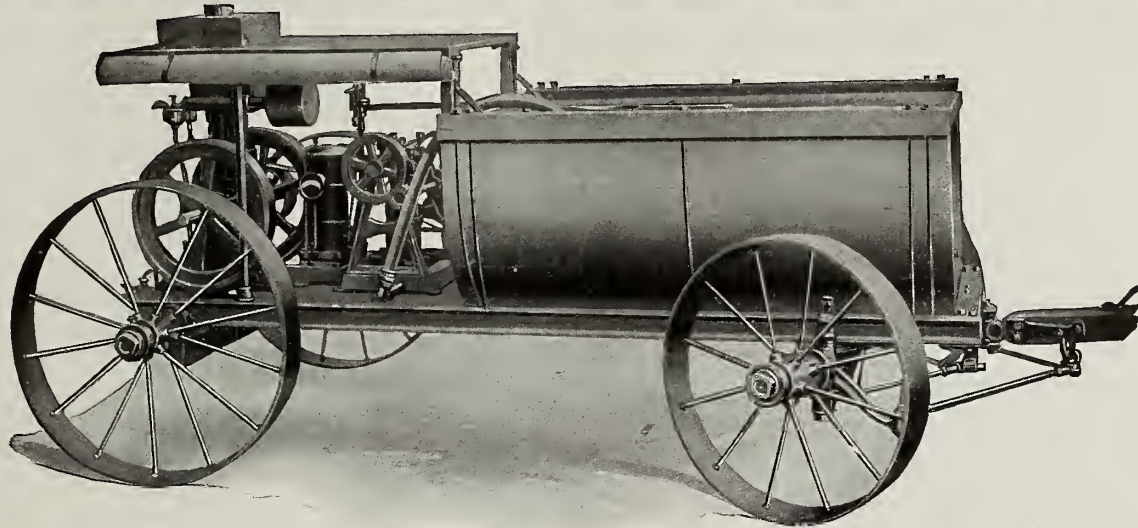
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This machine is built to successfully spray the difficult orchards where hills, rocks or adobe soil abound—where the others fall down

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SIMPLICITY OF CONSTRUCTION—Obtained by leaving out everything of a complicated or troublesome nature and using only such construction as experience has proven best.

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Whether your orchard is large or small there is a Hardie Sprayer to fill your requirements, assuring you spraying success, with a

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HARDIE HAND PUMPS—the world's best, so simple that the only tools required to keep them in perfect working order "are a boy and a monkey wrench."

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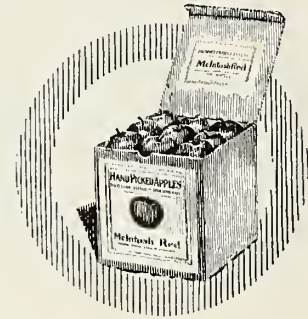
Who Gets the Money For the Apples That You Grow?

*Do you? Or is the profit eaten up in
transportation and commission charges?*

A BUSINESS expert has gone **Traveling With an Apple** for THE COUNTRY GENTLEMAN and he has written a dollars-and-cents story for you, telling just where every penny goes from the time the fruit leaves the tree until the ultimate consumer, here or abroad, is sinking his teeth into the luscious red cheek.

Within the next five years the output of box apples will be greatly increased as new orchards come into bearing.

Now is the time for you to learn how to handle your crop for the greatest profit—and THE COUNTRY GENTLEMAN is the weekly with the selling lessons.



It's Harder to Sell

fruit at a profit than it is to grow it. That's why THE COUNTRY GENTLEMAN is constantly hammering away at the selling end of the orchard business.

That's why men trained in salesmanship are constantly writing for us articles that deal with every angle of the business of disposing of the fruit at the greatest profit.

How to advertise—what to say, the people to reach, following up the trade; finding customers in town; labels on

barrels and boxes that will make your name known for quality goods; the development of containers for shipment by parcel post and for attractive display—all these are articles to appear during the coming spring.

A subscription to THE COUNTRY GENTLEMAN amounts to investment in a correspondence course in selling methods. The lessons you will learn may turn last year's loss into a profit on the coming crop.

If Orcharding is Your Business, You Need

The COUNTRY GENTLEMAN

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BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

American Fruits in Foreign Lands

By H. M. Gilbert, North Yakima, Washington

WE sailed westward from San Francisco on February 26th, 1913. A carload of Yakima apples was in the cold storage of the ship; eighty-five boxes to be given away to the leading fruit merchants, cold storage men, American consuls, newspaper men, presidents of Chambers of Commerce, missionaries, Y. M. C. A. men and friends of Yakima people whom I was to meet in many parts of the world.

For fifteen years I had been a producer and salesman of Yakima apples. I was now, for five months, to join the ranks of the consumer and study the apple problem from the consumer's viewpoint. What did I find? First, what we all knew, the consumer was paying too much for our apples, and as a result was buying few of them. Second, I found dealers were giving the consumer the poorest varieties and grades, through ignorance largely, but greatly to the injury of high-class apples. Third, again largely through the ignorance of the dealers, the consumer was getting Winesaps and Arkansas Blacks, and late winter apples in November and December, and Jonathans and Spitzenbergs in May. Fourth, I found, through lack of cold storage, very few apples were kept at proper temperature and condition from orchard to table, and were given to the consumer when overripe, mealy, tasteless, often to great loss to the dealer. Fifth, after considerable calculation I came to the conclusion that nine-tenths of the world's population knew nothing of Yakima, Wenatchee or Hood River apples, and not one man in a hundred ever ate one.

We talk glibly of our salesmanship. We use long-sounding words for our sales organizations; but facts are we are yet in the kindergarten of salesmanship. Though possessing the best selling product in the world, we haven't begun to challenge the world's attention. We don't appreciate that we have the most beautiful—not excepting diamonds—the most healthful product of the world, not excepting anything. Instead of being blue over the possibility of Virginia and New England apple growers learning our methods and putting us out of business, we ought to wake up to the fact that all we need is to forget our marketing theories and get our apples to the consumer in a reasonable, sensible way. Referring to Virginia, I am constrained to remark that Virginia has been growing and exporting apples for over 200 years. If she has the soil and climate to produce better apples than ours why

has she been so long discovering it? It would seem the real estate promoter, who has worked himself out of a job in the West, had found green pastures in the East. It takes fifteen years to get an orchard in the East to producing as much as a five-year-old here. Fifteen years of fighting pests, pruning, spraying, fertilizing—waiting—for the crop that is to put us out of business. That is too long even for the long-winded promoter of Eastern orchard lands.

But who are our real competitors in the markets of foreign countries? I searched every market in the big ports

cents—apiece for them. My conundrum was, why, if worth so much, they didn't grow more of them. I found a man in Berlin who owned an orchard of Colville apples and he answered the question. He said the district was very limited, a pocket in the mountains, the apples were grown on dwarf trees, trained like our grapes on a wire trellis. Only a few apples were grown on a tree, so the industry was not so exceedingly profitable. He was afraid our Western boxed apples would lessen their profits.

The first place we found apple orchards growing was in Japan. Here they produce a considerable quantity, exporting largely to China. Their apple industry has grown up largely in the last quarter century. The scions came from America. Their apples are good flavor, but the growers have a hard struggle with disease and pests. Every apple I could find had scab and fungous. Japan has a tariff of about twenty-five cents per box against our apples, but the American consul at Yokohama and Count Otani, the millionaire tea exporter and president of the Chamber of Commerce of Yokohama, assured me after sampling some Yakima Spitzenbergs and Delicious that there would be a considerable market there for such high-class apples. I sent a box to Count Otani's home and had a most delightful visit with him. When we left Yokohama, he placed on shipboard for me a chest of splendid tea, and I brought it around the world home—enough for my family for twenty years. I made an appointment to meet him in San Francisco in 1915.

China grows no apples so far as I could learn, but imports from Japan. In Hongkong, China, I found some Hood River apples. A little Chinese fruit store had bought a carload of six hundred boxes, 100 boxes of each of six different varieties. They were not Hood River's best. The price paid, according to the original invoices exhibited by the buyer, was \$1.85 per box f.o.b. Hood River—freight and insurance to Hongkong about thirty cents per box. Price asked by the Chinese merchant by the box \$6.50; all prices in gold. In company with the leading purchasing agent of the Orient I went to the best fruit house in Hongkong. The proprietor was selling a little jumble pack green apple from Australia, about like the old "Grindstone" apples used for cider, at the rate of \$5.00 per box. He apologized for them and said he had some good American apples in cold storage; that he was getting \$8.00 a box for them, but we could

Features of this Issue

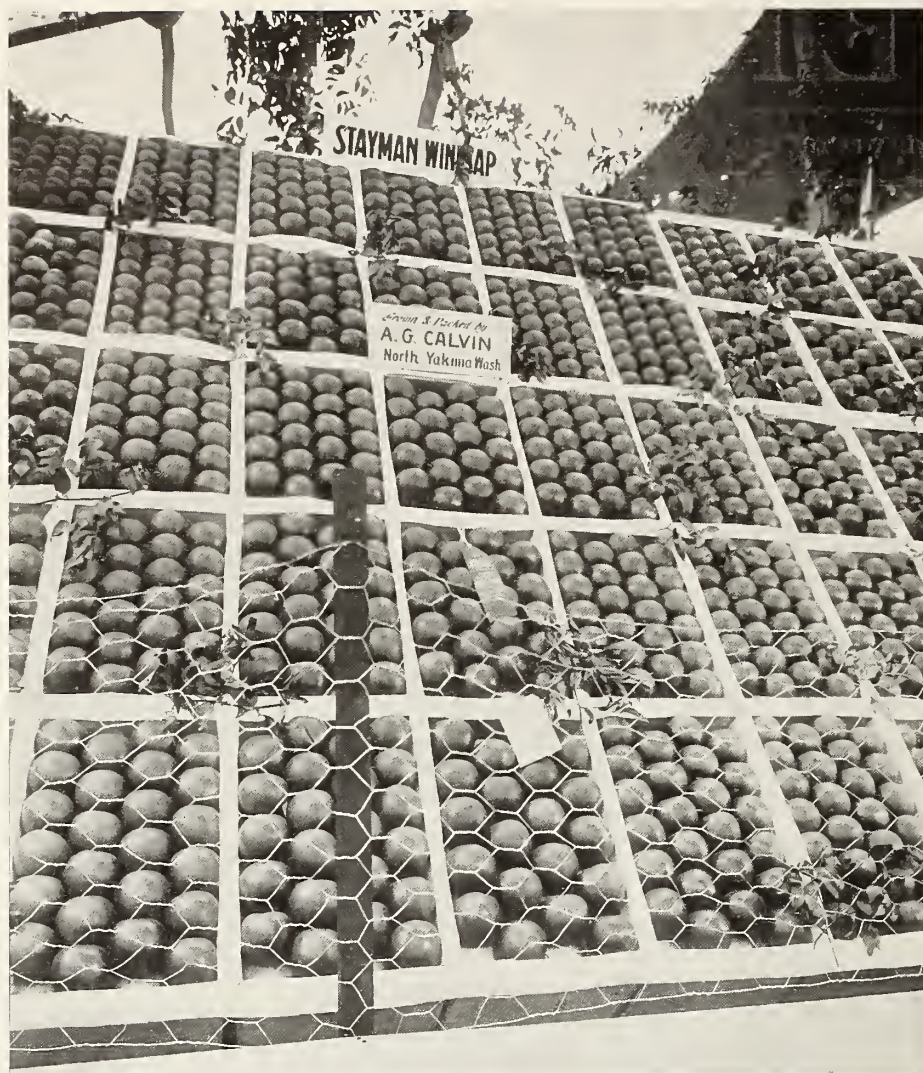
AMERICAN FRUITS IN FOREIGN LANDS

INSECTS AND DISEASES OF THE SEASON OF 1913

INFLUENCE OF PANAMA CANAL AND NAVIGABLE RIVERS ON THE FRUIT INDUSTRY OF THE NORTHWEST

THE MARKETING OF FRUIT FROM THE STANDPOINT OF THE PRODUCER

of the world, and in the big cities of Europe; I inquired of every American consul and commercial expert I could find; I bought apples everywhere I went and tried them; I gave many experts samples of our own. The universal verdict by every test was, that nowhere in all the world, with one exception, do apples of such beauty and flavor grow. I said with one exception, that is in the Tyrolean Mountains between Austria and Switzerland. Here I found an apple which may be compared with those of Yakima and Wenatchee. It is a beautiful, rich yellow apple, fine texture, good size, good flavor, a good keeper. They call it the "Colville Apple." I saw a carload in Berlin the last of May, kept in ordinary storage for nearly eight months. The price was 80 to 100 marks—\$20.00 to \$25.00—per box, but their box was a large one containing about double ours, 200 apples, ninety-six to hundred thirteen count, packed in fine excelsior with cardboard between the layers. I found these apples in all the good fruit stores of Paris, and I paid one and a half to two and a half francs—25 to 40



Twenty-five-box Exhibit of A. G. Calvin, North Yakima, Washington, winning the first prize of \$100 for the best twenty-five boxes of Stayman Winesaps at National Apple Show, Spokane, 1913

have forty boxes at \$7.50 per box. Another merchant was greatly disappointed, for he had understood I would have a carload of nice apples on board, and he wanted to buy them at \$6.00 a box. Another merchant, a branch house of a Seattle exporter, had a carload of four and a half tier and five tier Ben Davis due in a day; price \$3.00 a box wholesale. A short time before sailing I had taken an order from this same Seattle exporter for two carloads of four and a half tier and five tier Ben Davis at fifty-five cents per box. He cancelled the order because, as I was told, he could get them cheaper from another district. It cost him thirty cents a box to get them to the Orient, where they were used to "murder" our export trade.

The tropics, of course, produce no apples. A few are grown in India up in the mountains in the Kulu and Cashmere districts, but this is 1,200 miles from Bombay and the freight is much higher than from here. In fact the apples have to be carried out of the mountains some distance on the backs of coolies. Northern Italy grows apples, but they are shipped early in bulk to Austria and Germany. They are reported not high grade. Germany produces a quantity of apples, as does

England, but you are familiar with the success of our apples in competition in those markets.

We found California apples in many places, first at Honolulu. They were Missouri Pippins. We found them again in the Phillipine Islands. Our ship steward bought some at \$5.00 per box, but nobody would eat them. I found California Newtowns in Gibraltar, on the Mediterranean, where I bought them at twelve cents a pound on the 14th day of May; quality C grade. California is way ahead of us in export activities. They have marvelous dried and canned fruit, and wine exhibits permanently featured in practically all the large cities we visited. We found them in Berlin, Paris, London, the cities of Europe, as well as in all ports of the Orient. If California had had Yakima, Wenatchee and Hood River apples to exploit and sell instead of her own the last twenty years, she would now be scattering two-thirds of all our output in the export markets. But California Newtowns and Missouri Pippins are poor advertisers. They ripen too early in too warm a climate. They are poor flavor and poor shippers. When you understand all apples from America in the Orient are known as "American apples," you will under-

stand the disadvantage of California's advertising. In the Orient, Spitzenbergs, Winesaps, Ben Davis and California apples are all the same, "American apples," and most of the merchants insist you quote Spitzenbergs and Winesaps at the same price that they are quoted Ben Davis and Californias. Although all of them can tell the difference when you give them a sample, still it will take years of hard work to replace poor-flavored apples at a low price with high-class apples at a higher price. When Californias are out of season, San Francisco exporters call for Oregon and Washington Ben Davis, preferred without any label, the poorest we have in flavor.

March 26 we reached the Island of Java, in the tropics south of the Equator. Here the steward purchased some Australian apples at \$6.00 a box. They were Jonathans picked too green. Nobody on board would eat them, so they were held in cold storage and the Yakima apples ordered on the tables again. In Singapore we got some more Australian apples; they were of the variety called "Cleopatra," something the same thing as our Newtowns, but not so rich. From this point we saw Australian apples in all the ports of India, the Mediterranean and in Europe. At Hamburg, that splendid free port, the finest fruit market buildings in the world, I saw 40,000 boxes Australian apples sold in one day and at good prices. Fortunately for Australia, her apples come on at an opposite season from ours, so do not compete except with our cold storage stock. I can readily believe what a big German dealer told me, that Australian apples would not bring freight if they came in competition with ours.

Thus you see America (including Canada) is the great exporter of apples; never an importer. Almost every other country is an importer and rarely, excepting Australia, an exporter. The world looks to America for its apple supply. Heretofore our apple exports, excepting to Australia and the Orient, have traveled across the continent and often been delivered in a bruised condition to the steamships in New York, and at a freight and icing cost of sixty-two cents per box, \$375 per car. With the opening of the Panama Canal this spring, Virginia and New York apples can no longer take advantage of this handicap. Our 1914 apple crop, measured in freight rates, will be nearer to European markets than our 1913 crop was to Chicago and New York. From rates already assured by the big steamship companies, London and Liverpool will be as near as Boston and New York have been; Hamburg as near as Chicago; Glasgow as near as St. Louis; Naples no further than Philadelphia, Manila the same distance as Billings, Montana. I visited the head offices of the great Hamburg-American line in Hamburg. They have already put on a line of boats from Seattle, and many more will be put in service when the canal opens. I visited the big steamship lines in London. Hundreds of

ships are being built to ply through the Panama Canal and compete for the new commerce of the Pacific.

To those who minimize the benefits of the Panama Canal I ask, Will it not help us to get our apples to tidewater at a cost of ten cents per box instead of fifty cents, and then under refrigeration to Hamburg for forty cents additional—Hamburg with 70,000,000 apple eaters close by in Germany and Austria alone? This year, on an order for 20,000 boxes for South Africa, I had to figure sixty cents a box freight and icing charge to get to Montreal. Next year it will cost us ten cents a box to get to tidewater. We will save nearly the same amount to South America, to Southern Europe, to England and the Continent. Will not our apples, loaded promptly from the orchard or promptly from our cold storage plants onto refrigerator boats, arrive at destination in much better condition? The coast-wise steamship companies also gave me positive assurance they expected to move apples from Seattle to New Orleans, New York and the Eastern Coast under refrigeration for thirty cents a box. Then again when ships go direct from Europe to the Pacific Coast, and I understand thousands of emigrants are already purchasing their tickets on the installment plan, we will have more and better labor. Our Coast cities will grow and we will have better coast markets.

You ask if the hundreds of millions of hungry people of the Orient can afford to buy our apples. No, not all, but many of them can. A single firm in Manila imported three to four thousand boxes a month last season, and took 14,000 boxes, over twenty carloads, in a single order this year. If the American people once get a glimpse of the possibilities of the Pacific; if some power should arouse us to our duties in the Orient, the possibility of our expanding markets there are beyond measure. Little do we realize that 500,000,000 people in Japan and China are waking up and putting on the garments of modern civilization. They are not ignorant blanks. Their wants and ability to buy will multiply as fast as their great teacher, America, inspires them—shall I say permits them?

Japan has already taken our railroads, our telephones, telegraphs, our manufacturing machinery, our educational systems, our engineers, and is grabbing everything American as fast as she can pay for them. Japanese children are nearly all in school and studying our language, so they can easier copy our civilization. The leading thinkers of Japan are not satisfied to borrow our miracles of machinery and electricity. They say this people must have the morality, if not the religion, of our civilization. Some day Japan will adopt our alphabet, for modern commerce and business cannot be carried on with their cumbersome alphabet. The 4,000 letters which they use in an ordinary newspaper are too many for the typewriter. Japan, thoroughly converted to Western civiliza-



tion, in fact already insisting and boasting she is a western nation, is in turn teaching China. When I was in Tokyo 3,500 young men, the educated well-to-do class, the "flower of China," were in the universities of Tokyo, studying under America professors and Japanese teachers, who have been educated in the great universities of America and Europe. They were there training to be teachers and leaders in the New China. Japanese physicians are graduates of German universities and are said to be very proficient. Get it out of your head that these people are ignorant. They are smarter than we in many respects. They are creating wealth and saving. If they complete the awakening of China, if five hundred millions or any considerable portion of them, learn to use the implements of modern civilization they will transform the waste places of the Orient, people the islands of the Pacific and produce a commerce on our Western shores greater than the world has ever seen.

The key to this commerce—the key to the Orient—is the Philippine Islands. Manila Bay—25 miles across in either way—big enough to hold the navies of the world, entered by a narrow channel with the high rocks of Corregidor guarding, stronger, it seemed to me, than Gibraltar—whoever controls this is a powerful factor in the Orient. Much as I admire President Wilson in securing an elastic currency system, adequate to move our rapidly increasing crops and commerce; much as I admire him for championing the policy of agricultural credits, the most important move of the day, the policy that has put Germany far in the lead over her neighbors, so much do I regret the mistake he is making in the Philippines. To turn these factional, ignorant Filipinos over to themselves; to pull down the flag there now, would be wasting the opportunity and duty of a century. If we are to be a world power, and we cannot dodge it—if the world's commerce is important to the

greatest success of our apple industry, and I believe it is, we should take lessons from England. A little island—she controls a big part of the world's commerce. Her commercial experts are in every port. I met one of them in Hamburg, as bright a man as I saw on the trip. His specialty was Canadian apples. He was in close touch with Canadian apple growers and exporters. He kept them wise as to the European apple markets. Little things like this change the tide of the world's commerce.

If we are to be saved from our present follies of marketing we must get the idea that instead of concentrating our shipments to the big market centers, we should send a large part out in radiating lines to the thousand small cities—to the consumers all over the world who are begging for our apples. Last year they wanted our apples and did not get them. I found many willing to pay and paying ten times the price you netted, but they could not get them. England has the experience of a century controlling the world's commerce. With all her mistakes she has uplifted the nations of the East as no other power. She is rewarded with a rich commerce returning to her shores. We live in a day when it is recognized that the most important duty of a government is to build up its agricultural class, its great wealth producers. My belief is our own government should copy the policy of England in this respect and place trade experts in foreign markets familiar with our Northwestern boxed apples. I hope America gets the world-view. In any event our apple growers must get it. We grow an apple which the entire world wants. No other clime—no other soil produces such quality or such tonnage. We almost touch the sea, which makes the entire world our neighbor, and all its markets ours. The success of our industry will be as great as our dreams if we go at it to make our dreams come true.

The Influence of the Panama Canal and Navigable Rivers

Mr. Joseph N. Teal, before Washington State Horticultural Society Meeting, Walla Walla, 1913

MUCH has been written and more has been said as to the effect the opening of the Panama Canal will have upon the development of this Coast. Thus far generalizations have necessarily been indulged in, but now that the opening and use of the canal is but a short time in the future, those engaged in various lines of endeavor are beginning to inquire as to the effects on particular industries.

On November 16, 1911, I addressed the Oregon State Horticultural Society on "The Influence of the Panama Canal on the Development of Oregon Horticulture." At that time I tried to show that it must necessarily exercise a profound influence on the development of that industry and endeavored to arouse my hearers to the importance of preparing to take advantage of this new instrumentality of commerce on its completion. Further reflection and study has but confirmed that opinion, and I now feel that the future of the fruit industry of the Northwest is irrevocably bound up with and dependent upon water transportation in which the Panama Canal will play an important part. This rather dogmatic statement may come as a surprise and perhaps as a shock to my hearers, but it is my conviction.

It cannot be pointed out too often that under conditions as they exist we are producers thousands of miles from our chief markets, that these markets are highly competitive, that competition is constantly growing in intensity and that rail transportation is thus far substantially our only reliance. It should also be borne in mind that the measure of the transportation unit generally is not distance but cost. From a transportation standpoint, for long distances for comparative purposes, from five to seven or more miles by water are equivalent to one by rail,—for shorter distances the relation is less. These figures show in concrete form what water transportation really means. For instance, on a basis even of four to one a water rate for 2,400 miles would about equal a rail rate for 600 miles. The effect of water competition from the interior to coast points should not be overlooked, for on this part of the through rate much will depend. However, as I shall explain later, it will not do to rest quiescent upon the idea that we have nothing to do but to await the eager buyer from every market bidding for our fruit. If we do we will be doomed to disappointment. Considering briefly the probability of shipping facilities, the facts as known indicate that the vessel owners of the world are studying the situation with great interest. It is known that the fleets of some of the greatest companies of the world have already established lines both between the Atlantic and Pacific Coasts and this Coast and foreign countries. There will be no lack of vessels if the business justifies. Cargo must be had

in both directions if operation is to be successful. To operate profitably ships must bring in the articles we need and carry away the commodities we produce. Therefore, generally all vessels, foreign or domestic, regularly engaging in this trade will ultimately be prepared to carry our various productions. Before attempting to discuss the effect of water transportation upon the fruit industry I will submit a statement upon the general situation as it exists today.

It is extremely difficult to foretell with any degree of certainty what ocean rates will be at any given time, or from time to time. So many elements enter into it, of which there is no way of taking account, that at best it is largely speculative. The direction of the movement is often controlling in making for low rates. One illustration is familiar to all in touch with water traffic on this Coast, and that is the eagerness freight is sought by schooners coming north to load lumber for Southern coast ports. On the Atlantic Coast the general movement is the opposite, the lumber loading being north and the empty movement south bound. In some recent charters on the Atlantic Coast from Staten Island to Savannah, Georgia, rates were named on cement at 80 cents a ton of 2,240 pounds. In some cases free discharge would be given the cargo at the docks, the vessel thus securing 50 to 60 cents a ton net for transportation. Another feature should also be kept in mind, namely, terminal charges. On short hauls this is a very important item in water transportation, and is an element in the short-haul rate. On the other hand, after once aboard a vessel, freight can be transported profitably at

very low rates for long distances. After all is said, it is a fact that water transportation, and particularly deep-sea movement, is the cheapest form of carriage we have. Existing rates by regular lines, while not of special importance owing to the present methods of handling, breaking bulk, division of earnings, etc., are of interest and shed some light on the subject.

At this time the rate on barley from Portland to New York via the American-Hawaiian lines is 40 cents a hundred pounds. The rail rate between the same points is 81.8 cents per hundred pounds. The barley, when shipped by sea, must be unloaded and reloaded two to four times in transit besides the terminal handling, and out of the rate at least 25 per cent must be paid to the Mexican railroad. If, under these conditions, this traffic is attractive, how much lower will the rate be, and still be remunerative, when the vessel goes direct without breaking bulk and retains its earnings? An enormous saving will also be made by doing away with the necessity of having a ship on each side of the Isthmus. Not only will the expense of breaking bulk be saved, but the earning capacity of the ship itself will be almost doubled in time saved. In other words, the ship loaded on either coast will proceed direct to destination. In consequence, the twenty-six vessels of the American-Hawaiian line will have vastly greater efficiency when operating through the canal than they have today.

Lumber and shingles are now carried under the above described conditions by the regular lines from Pacific Coast points to New York at 54.5 and 55 cents per hundred pounds respectively, as



"The Disputed Trail," made by Mrs. Edith A. Proudfoot, of Fairfield, Washington, winner of first prize of \$200 for the most original and attractive display made by an individual. The horse and the rider's hat and costume, even the whip, were covered with dried apples. The rattlesnake in the trail was made of apple seeds. Exhibited at the National Apple Show, Spokane, 1913



Twenty-five-box Exhibit of F. E. Gahringer, Wenatchee, winner of first prize of \$100 for the best lot of Winesaps, at National Apple Show, 1913

against a rail rate of 75 to 85 cents per hundred pounds respectively. For some time, while the Bates & Cheeseborough line was in operation, the rate on lumber to New York was 40 cents per hundred. What the rate will be when direct movement by water takes the place of interrupted movement, re-handling, and division of earnings, is as yet problematical. This, however, may be said, if elimination of handling and rehandling and saving of time as well as investment count for anything in cost of operation, it surely will be reflected in the rate. As shedding some light on the subject, let us consider the grain rate from Portland to the United Kingdom and Europe. For the past five years the minimum rate from Oregon and Washington ports to Europe has been 27 shillings 6 pence for sailers and 30 shillings for steam tonnage. For the past two years there has been a large advance in charters and rates have varied from 35 to 50 shillings, averaging far above 40 shillings.

In considering probable reductions in rates effected by the opening of the

new trade route, about the best one can do is to consider the cost and expense that will naturally be saved by vessels, as measured by the shorter distance, and draw such conclusions as may be justified therefrom. Through Magellan or around the Horn the distance to European ports in round numbers is 14,000 miles; via Panama 8,000 miles, a saving of say 40 per cent. It would therefore seem that if rates now and heretofore exacted are and have been remunerative, a reduction of at least 10 shillings per ton, or say \$2.40, should certainly follow from the use of the canal.

It is also altogether reasonable to assume more vessels will come with cargo than do now. If so, this should affect the rates to some extent outward bound. Mr. E. W. Wright, an expert on shipping and transportation matters, gives the following statement: "There was shipped from Portland and Puget Sound in the five years ending with the year 1912, wheat and flour (the latter being reduced to wheat measure) to the amount of 157,082,228 bushels. Less

than one-half of this amount was shipped to Europe, but it was that which was shipped to Europe that fixed the price for the remainder. The price of wheat the world over is the European price, less freight and handling charge. We thus find that on the 4,200,000 long tons (2,240 pounds) of wheat shipped from Oregon and Washington in the past five years there would have been a saving by Panama Canal rates of not less than \$2,000,000 per year, which is the minimum direct saving which the wheat growers alone would enjoy." The lowering of the freight rate means an increase in price by a like amount. This will not only affect grain now being grown, but will cause other lands not now cultivated to be tilled, thus increasing production. As I have heretofore stated, water transportation (and by water I mean both deep sea and inland) is certain to have a controlling effect on the future development of the fruit industry. In the time at my disposal I cannot go into many details, but will submit a few.

Our market should be the world. At present, however, the largest relative consumption is in the great Atlantic Coast cities, especially New York. It decreases as we go west relatively into individual market, but increases in the number of individual markets. It requires a vast spread of markets to assimilate our limited production. But a trifling percentage is sold abroad. Not only is the market thus limited physically, but there is constantly increasing competition by reason of orchard development throughout the entire country. As we are but in our infancy in production it is high time consideration, and serious consideration, were given distribution. Handicapped as we are by cost of distribution and limited markets, other baleful results almost necessarily follow. It is useless under existing conditions to hope to market the entire product. It is the better grades that reach the consumer, while the lower grades are largely a waste product and worse than waste, as in a number of directions they add to the cost and bring no returns. I am told by competent authority that the loss in orchards of fruit not marketed, or marketed at a relative loss, is at least 25 per cent. Consider such a loss as this in the wheat crop, the flocks and herds, and we can form some idea of what it means to the fruit industry.

It is estimated the present acreage of apple orchards in the three Northwest States comprises 386,000 acres. Of this about 20 per cent is in commercial bearing. In 1912 these states shipped about 15,000 carloads. The estimated yield for shipments in the immediate future is as follows: 1914, 25,000 cars; 1915, 30,000 cars; 1916, 35,000 cars, and in 1920, 50,000 cars. When all our fruit lands are in full bearing the tonnage will be enormous and must find markets if the industry is to prosper.

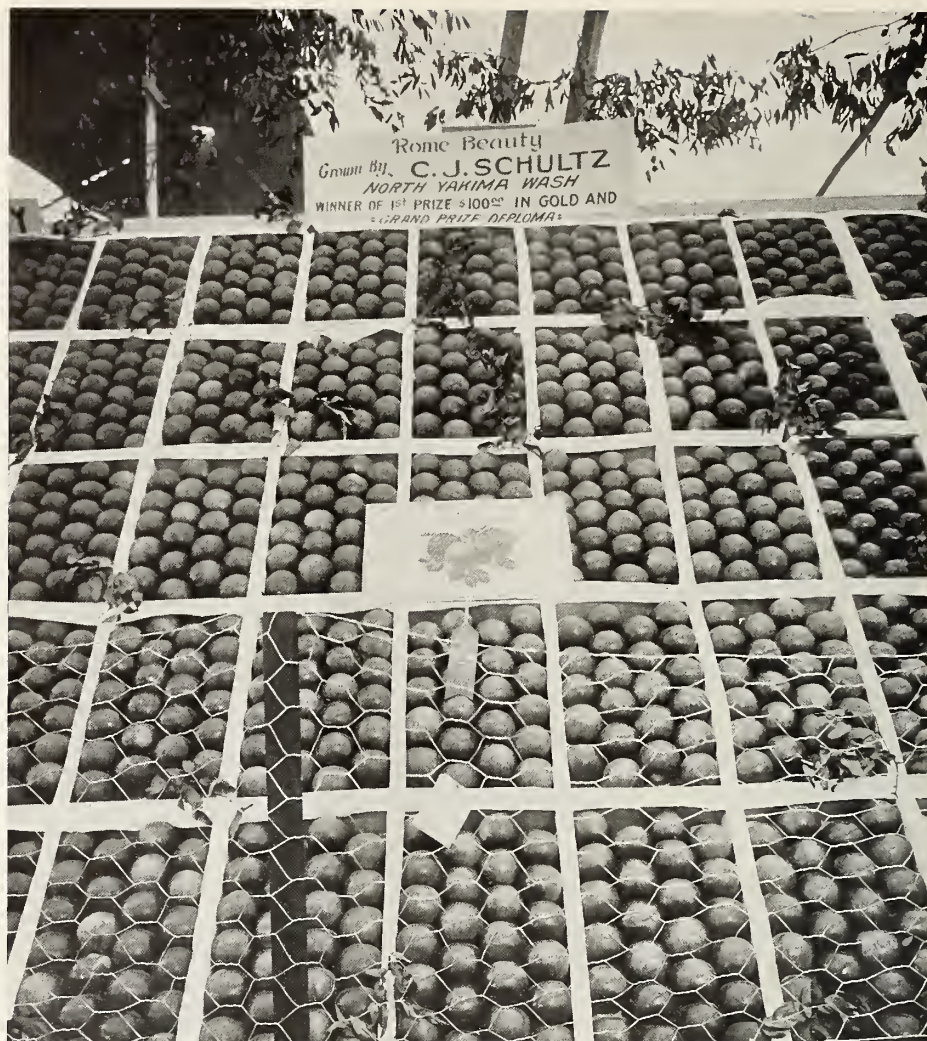
The difficulty with respect to existing conditions, with limited markets and increasing competition, is that our

values are seriously impaired without our being able to protect ourselves. Large crops in the Northwest irrespective of Eastern crops, or large crops in the East irrespective of Northwest yield or combined large yields alike affect values.

Taking apples as representative, we have to meet the Eastern barrel apple competition, and the competition of California, Colorado, Utah and New Mexico, all excepting California having much lower freight rates to consuming points than the Northwest. It must be conceded also great improvements have been made in the East in cultural methods, in quality, packing, etc. The acreage devoted to fruit culture in the East, and in the Middle West where they are now packing in boxes, is creating new competition in all territory immediately east of the Rocky Mountains.

I cannot go into the comparative cost of production, but submit a few figures on freight costs. To the Atlantic seaboard markets the freight on an average box of apples (50 pounds) without storage is 59 cents, or \$1.18 per hundred. The average box costs, laid down in Europe (not including storage, 20 cents), 90 cents, or \$1.80 per hundred, or \$36 per ton. In the majority of cases Eastern storage must be added. In case of British markets arbitrary "customary charges" of twelve cents a box are always made and must be added. Our export trade amounts to about five per cent of our production and but three per cent of Eastern barrel exports. This necessarily follows from the enormous cost handicap under which we labor. The consequence is that our apples retail on an average of five to seven cents each in Europe, an almost prohibitive figure. The maximum value the masses can afford to pay is about one a half to two cents each. I have often heard fruitgrowers congratulate themselves on the very high prices our fruit brings at times, and that there are enough very rich people in the world to consume all we can produce. It is my observation that the people who really are successful in business are those who deal in articles of daily use, bringing the price within the reach of all. Kerosene oil is a good example.

Without enlarging further upon particular features, it must be conceded under existing conditions we are facing a serious problem and one in which producers, consumers, commercial, industrial and transportation interests are alike interested. In other words, it is a problem not to be left to the producers alone to solve. We should not delude ourselves into the belief that because of the decreasing production of apples of late years all will be well. Causes not at all favorable to the industry entered into this, and production is now on the upgrade again. I fear what I have thus far said has not been very entertaining and certainly not particularly optimistic, but I certainly would not have appeared before you did I not feel I could see a great future for the fruit industry of the Northwest. As in many other cases, the solution is



Best Display of Twenty-five Boxes of Rome Beauties, entered by C. J. Schultz, North Yakima, Washington, at the National Apple Show, Spokane, 1913

in one's own hands,—the question only, will it be applied? Co-operative organizations and a sustained united effort will count in horticulture as in any other line of industry. Every element that makes for efficiency and economy from the time the seedling is set until the fruit is placed in the hands of the consumer must be considered. The co-operation must not be limited to the grower, but extend to and be participated in by the commercial organizations of our cities. Shipping points must furnish storage and other facilities. Work on these lines and the use of water for transportation will revolutionize the industry.

While it is idle to speculate on rates, it is certain water transportation will be much lower than rail rates. One authority has named \$7 per ton, or 35 cents per hundred, as a profitable rate under refrigeration between the Coasts. If this figure be even approximately right, the saving will be enormous. Loading from this Coast to Europe direct will show relative reductions. There can be no doubt the sea route via Panama offers unquestioned promise of enlarged market areas. At present many consuming territories are absolutely closed to us in which in the near future it may be confidently expected our fruits will be found. Under sound industrial rates, efficient trans-

portation, and cheap storage our foreign tonnage should rapidly expand. The pressure on the home market will be relieved and we can reach the great consuming population of the Atlantic slope on rates that will show a profit where now a loss would be made. The census of 1910 shows that about forty million people live in the states bordering the Atlantic and Gulf of Mexico. This in itself is a large consuming market. But it is not only to the ocean must relief in this direction be sought. Our inland waterways—open rivers—will be powerful factors in solving this great problem. The rate to the sea is as important as the sea rate and just as essential. Indeed in community and industrial expansion it is more so. Properly improved, the Columbia River and its tributaries will bring about the lowest possible basis of local rates to seaboard. When it is considered that about 60 per cent of the fruit-producing area is naturally tributary to the Columbia River basin the effect of a properly improved river can be understood even if its exact effect cannot be measured. I sometimes feel the producers of the Inland Empire look on the improvement of their great rivers as something they are in a measure interested in only on general principles, and not as a great instrumentality and

Continued on page 16.



100% SPRAYING

**HAYES TRIPLEX POWER SPRAYER
300 LBS. PRESSURE GUARANTEED**

HIGH Pressure spraying is plus spraying—it is 100% efficient. Perfect fruit and abundant yields are impossible without spraying, and the more efficient the spraying operation the greater is the profit from the crop.

300 lbs. pressure completely atomizes the solution into a penetrating fog-like mist that *seeks out* and *adheres* to every particle of foliage. The atomization is so perfect that drops will not form on the leaf and fall off, wasting the solution, and so little solution is required as to prevent any possibility of injury to the foliage. Besides, high pressure gives greater capacity for the same size nozzles, hence more rapid work and lessened cost of spraying.

Low pressure spraying (100 to 200 lbs.) deluges the tree with a watery spray that is not only wasteful but injurious. Trees sprinkled with poisonous solutions under low pressure will not give maximum yields of the highest quality of fruit. 300 lbs. pressure is demanded by the experienced

purchaser because its increased efficiency means profitable spraying and its greater economy justifies the use of the best solutions obtainable.

HAYES Power Sprayers are tested to 500 lbs. and are *guaranteed* to maintain 300 lbs. working pressure. The HAYES is of thorough, mechanical, up-to-minute construction from tank to nozzle. Special design engine, large capacity high pressure pump, improved agitator, 200 gallon tank, hydraulic tank filler, hose reels, bamboo rod holders, extra high pressure hose and HAYES spray nozzles, improved in every detail—the HAYES is sure, reliable and easy in operation and *guaranteed* in efficiency.

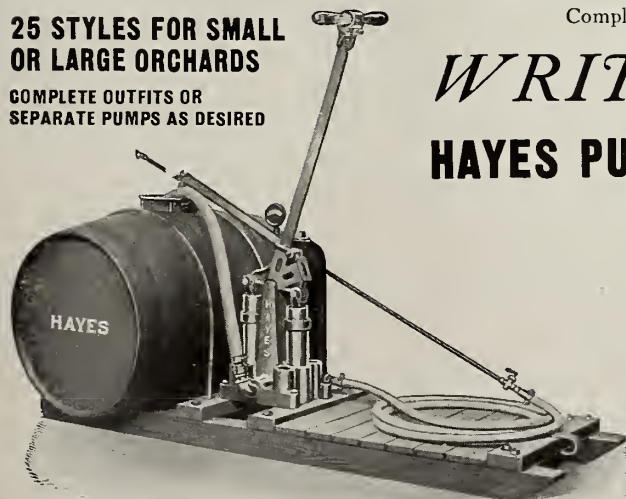
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COMPLETE OUTFITS OR
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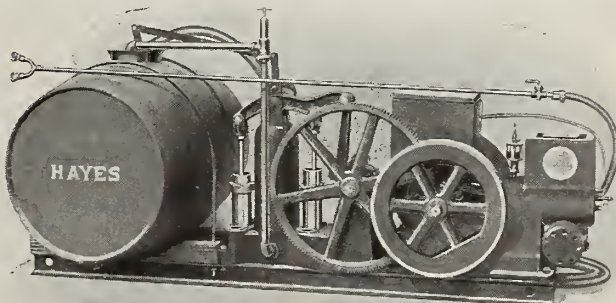
Complete stocks carried at Western, Central and Eastern distributing points.

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Send postal for free book 32 on High Pressure Spraying and complete catalog. While investigating sprayers, you can't afford to overlook this modern and scientific line. *Write today, then you won't forget.*

HAYES PUMP & PLANTER COMPANY, GALVA, ILLINOIS

**Small
Power
Outfit**





Continued from page 14.

vital factor in their development, as properly improved it will be. At any rate to me the new opportunities via the water routes represent the chief hope of the growers today, and I believe that in water transportation will be found the solution of their industrial progress and profitable operation.

As yet I have but referred to the probable effect of the opening of the Panama Canal on fresh fruits. To my mind the greatest benefit will come in another direction, leading both to a greater saving, more use and wider distribution, namely, the encouragement that will be given to drying, preserving and canning fruits and berries of all kinds. Canned goods are exceedingly attractive cargo and command very low rates. The development of the canning industry would appear inevitable and Northwestern fruits in this form will ultimately be found on the shelves of distributors throughout the world.

It may not be inappropriate to advise you as to the steps the City of Portland is taking to aid in the great work of development as applied to the fruit industry. Other cities doubtless are doing work on the same lines. The question is too broad to be localized, and all should share in the satisfaction that comes from participating in the work of upbuilding a common country. The commercial and financial interests of Portland realize that relief must be afforded through the new opportunity of sea transportation, and in particular in furthering economies in all directions in order that the industry may be profitable, regular and dependable to every grower. They appreciate the necessity for the greatest possible co-operation between themselves and the producing districts as vital to the welfare of the latter and of mutual benefit to both. Everything possible to help bring about a condition of the utmost efficiency in order that the grower may be served with every needed facility to transport his products via Panama and over sea in general and by the inland waterways is being done. A public dock system is under way; warehouse facilities, including a cold storage

plant, will be erected in time to take advantage of the opening of the canal and the new transportation conditions. The warehouse and storage plants will be of such proportions as to take care of the maximum movement that may take place by water. Portland recognizes also the great desirability of co-operative efficiency between itself and the producing districts in the way of many and varied transportation reforms and betterments; of efficiency and economy in the orchard; labor difficulties in the harvest season; remedies that must be applied to correct them; the general necessity for standardizing the output to the highest efficiency at the lowest possible cost; the need for study of foreign markets and the many other items of assistance and advice that can be profitably rendered to growers as a means of getting the fruit industry stabilized; of attracting capital and exploiting the opportunities for by-product plants, which are as essential as cheaper and more efficient transportation conditions. As deeply interested in the orchard industry Portland extends its hand of aid, advice and business energy to every fruitgrower, to every interest, direct or indirect, in the fruit business in order that by broad, effective and amicable co-operation the results may be substantial and prosperous. To that end the business interests of Portland have formed a league that will aim to bring about all these necessary reforms, the details of which will be submitted to all interested before the first of the year. It will be built upon lines of harmony and progressiveness, and everyone interested will be invited to join and labor together in the great work of establishing the fruit industry upon a basis that will be stable and permanent, with success and fair returns to the growers as the goal. Portland is doing this because, as a great commercial center, it feels its duty is to protect and stimulate the producing districts throughout the Northwest to their fullest needs.

There are many other features of interest I would be glad to dwell on did time permit, as to the effect the opening of this great waterway will have on

this section, but I must refrain. I will close with the same words used more than two years ago when addressing the Oregon State Horticultural Society: "I have but touched upon a few of the many important points that might be covered in a paper of this character. It has been my purpose to show you how vitally your interests will be affected by the opening and operation of this gateway. I have endeavored to cause you to realize that the questions involved should be carefully studied and kept in mind. I have tried to show how directly the horticultural industry is affected by the transportation cost and that the improvement of our waterways is a subject you cannot ignore. Indeed, as one studies this question, one finds, as is always the case in any movement or fact concerning the general welfare, that we are all affected in a greater or less degree. There can be no separation or segregation of interest. As I have studied this question it has been a matter of profound satisfaction that this monumental work will result in the greatest possible good to the tiller of the soil, and will, in doing this, benefit countless thousands the world over. May you realize what it means to you, and, thus realizing, commence at once to plan to secure the benefits, from the day the first white-winged messenger of peace and commerce passes untrammelled from the Eastern to the Western sea, and the dream of the centuries becomes a reality."

Horticulturist and Farm Manager

Owing to the sale of the project of which I now have charge, will be open for re-engagement about February 15. Graduate of Western Agricultural College. Seven years practical experience in the Pacific Northwest. Married; age thirty-two. Would prefer to locate again near the coast, but will consider first-class proposition elsewhere. Address W. B. L., care "Better Fruit."

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Insect Pests and Diseases of the 1913 Season

By S. W. Foster, Entomologist and Manager Insecticide Department, General Chemical Company of California

THE fruit-growing season of 1913 in the Pacific Northwest differed in many respects from any preceding season for several years. Some fruitgrowers in all sections, and many in some sections, differed very little from those of preceding years. They did not meet the change of conditions with sufficient energy, and stick to the cause long enough. A more thorough application, closer attention to details, one or two additional sprayings, a change in combinations to make the treatment more comprehensive and thorough, would have been one of the safest investments for profitable returns that the most careful investor could wish for.

Good, or at least better prices, were practically certain before the blossoms had fallen from the trees. Before the first brood of codling moths were entering the fruit, any careful observer could positively know that the fruit crop would be comparatively small all over the country. Under these conditions, would not the wise move have been to bend every reasonable energy to save every apple and make it the best possible quality? An apple grown west of the Rocky Mountains showing the slightest mar, whether it be the sting of the codling moth, a scab infection, depression, knots or bumps caused by the sting of an aphid, dis-

coloration or lack of size as a result of mildew on the foliage, or the pink spot caused by the San Jose scale, have little value to the fruitgrower of these sections. A careful auditor and accountant would put all such apples on the side of expenses or losses rather than on the side of profits.

Someone will say this is drawing the point too fine, that these apples can be worked into by-products. However, such a statement is only beating around the bush. Any fruitgrower who keeps books and careful records must admit that these second, third or tenth-class apples cost him just as much as those that go in the best packs he can put up. But even this is only a small part of the loss. At least two other and much more important factors must be taken into consideration. First, the great increase of cost in grading and packing expenses, and second, and greatest of all, the undisputable fact that with the most experienced, careful, and consequently the most expensive packers you can get, some of these apples, not quite up to standard, or perhaps having the small egg of a late-appearing codling moth secreted on or around the stem, or partly hidden at the calyx end, will slip into the pack. All of us know what this means. There may be only one such apple in one box of an entire carload, yet that box will be the

one the inspector will get, and the one imperfect apple will be the first one he gets in his hands. Unfortunate, but nevertheless true, and when he finds this one neither he nor anyone else can tell how many more will be in the car. Suppose some of these defections escape the inspector and get back to the terminal market. It is even worse and more expensive. Also, it creates suspicion in the mind of the consumer of all apples from that orchard, and in some cases from the entire section, a condition which all of us in the West want to avoid.

Granting that if all the apples grown were perfect, there would be too many for the market, and some must go to by-products, must we not give the by-products man some consideration? Do not good apples have greater value than wormy apples or scabby apples? Do they not make a higher grade or better class of by-products? If people know that these products are made only from clean, sound fruit, the consumption of these products is not only increased, but consumers will pay a higher price. The best advertisement any by-products plant can have, whether it is a cider plant, vinegar, apple butter, preserved apples or what not, is to be able to prove to the world that only clean and sound fruit is used. Their processes may be ever so good and carefully



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handled, yet if wormy apples, scabby apples or decayed apples are used, the quality is poorer and the price received is smaller. Several men running these plants in the Northwest have told me they had to refuse to accept many apples this year because of the poor quality.

Now as to some of the real causes. The question has often been asked, "What was the matter with the season of 1913, what was wrong or out of place with the codling moth, apple scab, green aphids, red spider, etc.?" My answer in Spokane to these questions was that nothing was wrong with the worms, scab, aphids or red spider, they all did remarkably well, but the trouble was with the men who did the work; to be more specific, with the men who did not do the work that

should have been done. To further explain: Apple scab has been spreading over a wider and wider area of the Northwest for some time. Also, it has been getting more plentiful each year in many of these sections. There was a greater number of apples in 1912. While many of these were slightly infested with scab, the percentage of the total crop was small. This year, as would naturally be expected, scab was more plentiful and developed rapidly, weather conditions being ideal for its spread. Also, the apple crop was smaller than last year, the total number of apples much less and many more being infested, the percentage of scabby apples in some sections was enormous. With the codling moth, conditions were, in a way, similar. Coupled with the heavy crop, weather conditions in

the spring of 1912 were unfavorable for the development of the worms. Cool days and cold nights with rain killed many of the young worms, also greatly lengthened the incubation period, or the time required for eggs to hatch and the comparatively cool summer lengthened the life history of each individual to such an extent that only a partial second brood appeared. In 1913 conditions were reversed. A goodly number of worms passed the winter successfully, weather conditions were more favorable, the eggs hatched in a shorter period of time, fewer of the young worms were killed by climatic conditions, less time was required for development, with the result that practically all sections had two full broods, and many interior sections a good proportion of third-brood worms.

One point must be borne in mind, however, and that is, the codling moth can be successfully controlled on any variety of apples in any part of the United States during any season. To do this, however, spraying must be done thoroughly and at the proper time. There was not enough spraying done in 1913. Growers quit spraying early in the season and, in many cases, the early sprayings were not as thorough as they should have been. Those who sprayed well and often obtained good results. The remark was often made that the crop was going to be small, there were few worms last year, consequently we will take a chance with less spraying this year. I need not comment on the outcome. The cull apples tell the tale. There are others, and I know it is a vital point, for I am also a fruitgrower and had the same experience, who, because of low prices last year did not feel financially able to spend the money, but to this we must answer: the most expensive economy in the world is to try to save money on such chances as was the case this year. Everything in the world was against you and not a single odd in your favor. Let every man who lost as much as five per cent of fruit from worms or scab, or both, figure the gross returns he would have received from this fruit and see how much arsenate of lead, at nine and one-half cents per pound, the amount will pay for. Or figure it differently,—five per cent of the gross receipts this year would represent the net profits on what amount of business, especially on such a year as the season of 1912? I do not believe there is any business organization going today that could keep out of bankruptcy five years if they lost regularly five per cent of the gross sales. Think for a moment what any manufacturer would be up against if he must face such a proposition. Then compare yourself with a manufacturer, for in reality that is what you are, or at least you own the factory that produces fruit, 100 per cent of which can be sold, or 95 or 60 per cent of which can be sold. After figuring at this rate apply to your own case. Some of you had 95 per cent clean fruit and some of you had 25 or

Reo the Fifth

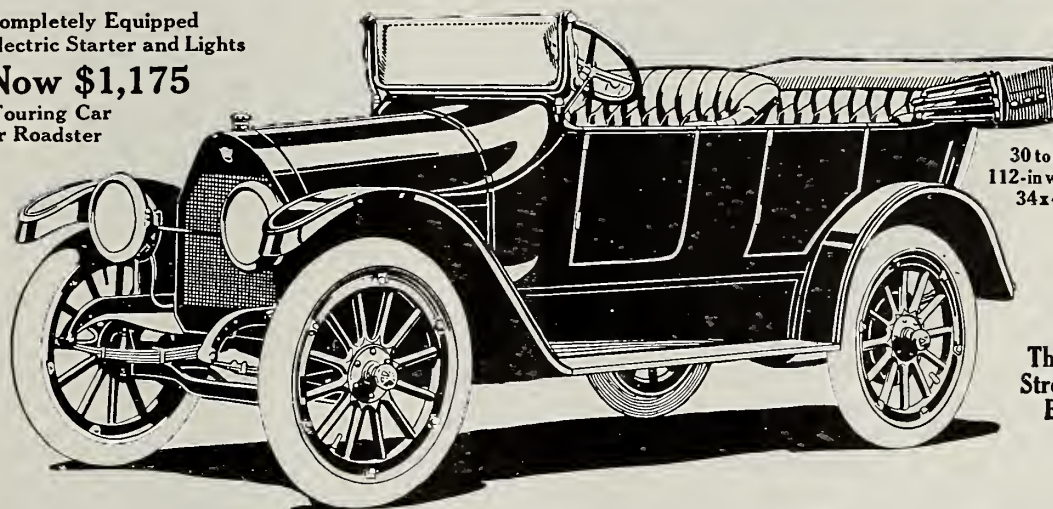
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Mr. R. E. Olds has now done what he aimed at when he brought out this final car. By confining his output for years to one model, he has brought down the cost over 16 per cent.

Up to this season, Reo the Fifth sold for \$1,395 completely equipped, with electric starter and electric lights. Now, with this new streamline body, with better equipment, with 36 improvements, the price is \$1,175 equipped.

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Three years ago Mr. R. E. Olds brought out Reo the Fifth as his 24th model. He then announced—after 25 years of car building—that this car marked his limit.

This new chassis, like every new chassis, required an immense investment. New automatic machinery, new jigs and tools. And against each car a charge was made to cover this expense.

This Car jumped at once to an enormous sale, and that machinery investment has been all wiped out. Now this charge is deducted

from the price. Also the lower tire cost. Also the lower cost of electric equipment. As a result, we now announce this \$220 reduction.

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This year we adopt the beautiful streamline body. All the leading cars, both in Europe and here, are now coming to this type.

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Reo the Fifth has stood among all men as the highest type of an honest car. All the steel is made to formula. All is analyzed twice. Every driving part, as a margin of safety, is given 50 per cent over-capacity.

The gears are tested in a crushing machine for 75,000 pounds per tooth. The springs are tested for 100,000 vibrations. The car has 15 roller bearings, costing five times as much as common ball bearings. It has 190 drop forgings to avoid the risk of flaws.

It is built slowly and carefully, with countless tests and inspections. Each car is built as though Mr. Olds were building it for himself. So the car stays new. The upkeep is very small. Year after year, when other cars grow troublesome and noisy, Reo the Fifth keeps new.

It is built for men who want the utmost in a car. Men who want low cost of upkeep. Men who buy the car to keep. It could be built for about \$200 less without all these precautions.

And it has our exclusive one-rod control. No levers in the way.

A thousand dealers sell Reo the Fifth. Write for name of nearest dealer. Also our new catalog.

Reo Motor Car Company, Lansing, Mich.

Canadian Factory, St. Catharines, Ont. Canadian Price, \$1,575.

(222)

30 per cent. What would that extra 70 to 75 per cent have done toward tiding over such years as the year of 1912? One thing to keep clearly in mind is that the loss of five per cent in the gross receipts often means the difference between a profit and a loss for the entire season's work. Do not stop spraying until you know that the infestation has been reduced to the minimum. It very often happens that an additional expenditure of five to ten dollars per acre would have increased the net returns from twenty-five to fifty dollars per acre, or, in many cases, from one hundred and fifty to two hundred dollars per acre. The percentage of profit for the extra expense, if used in the right way, is often enormous.

All of us know that a good orchard, when properly handled, is one of the

most profitable enterprises in which you can be engaged, but when not properly handled, and with poor returns, it is a most unsatisfactory proposition. The codling moth, apple scab, mildew, green aphid, purple aphid and red spider can all be very efficiently controlled by spraying the trees. By efficiently controlling I mean that the work can be done in the right way, at the right time and with the right materials without too great an outlay of money or labor to prevent profitable returns on the investment. In this connection, there are some very important principles to take into consideration when the control of any insect trouble is undertaken. Time of application comes first. There is one time in the development of all these troubles when they are most vulnerable or susceptible

to treatment, and a time when the work can be efficiently done. It is too late to spray for the codling moth after the worms have entered the fruit; it is too late to spray for apple scab after the surface of the skin has been ruptured by the growth of the fungus, or for aphid after the leaves have been curled. In this connection, however, the condition of the trees and climatic conditions have to be taken into consideration.

Thoroughness of application is the next important factor after time. Scab will develop on one side of the apple just as well as on the other; the late-appearing codling moth had just as soon enter the skin through the east side of the apple as the west side, and the San Jose scale seems to thrive just as well on the leeward side of the limbs as it does on the windward side.



Did you have Spray troubles last season? Some growers had very serious ones.

WHAT'S THE USE?

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Why not use an ARSENATE OF LEAD that has successfully weathered the varied climatic conditions of Washington, Oregon, Idaho and Montana the past four years?

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Ask your local or state authorities. They are best qualified to advise as to local conditions.

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Salem Fruit Union	Salem, Oregon

MANUFACTURED BY

The Grasselli Chemical Co.
CLEVELAND, OHIO

The entire surface of the tree, fruit and foliage must be covered if you are to get satisfactory results. If it is necessary to spray in windy weather, use equipment that will enable you to spray whether the wind blows or not. With a good angle nozzle on the end of a long rod, and a machine giving high pressure, you need not worry about the wind, provided the right kind of men are doing the work. As to material, there is a great supply of good spray materials on the market. Always use good materials; think of quality and efficiency first, then the price. Use for the purposes it is intended for, and do not attempt to stretch the limits of one article too far. The day of the cure-all "dope" in a single barrel is past. It does often happen, however, that two

or more materials, namely, a fungicide and an insecticide, can be combined at a single application which, if the right materials are used, will save the labor and expense of an extra application. One other thing should be mentioned here, and that is to follow directions. Don't take it for granted that if four pounds is good twice that much is better, or that if four pounds does the work three ought to give fair results.

In the dormant treatment of fruit trees, we must look out for such troubles as the San Jose scale and other scale insects, woolly aphis, eggs of the green aphis, purple aphis, and for anthracnose on apple trees. On peach and other stone fruits we have the so-called peach blight or gummosis, shot-hole fungus, curl leaf, and in some

cases peach-twig borer, in addition to the scale insects mentioned above. The diseases mentioned here are best controlled by the use of bordeaux mixture, using eight to ten pounds of the commercial paste to one hundred gallons of water, or in the case of the home-made preparation use the 6-6-50 formula, and spray the trees thoroughly in the late fall or very early winter. For anthracnose on apple trees, spray with bordeaux before the winter rains set in. Lime-sulphur solution applied at winter strength in the spring before the buds open is also a valuable aid in controlling the diseases mentioned here. Lime-sulphur at this time is also the proper treatment for the peach-twig borer, when such is present. For San Jose scale and the eggs of the green aphis, use either lime-sulphur solution at the rate of 12½ gallons to 100 gallons of water, or crude oil emulsion at the rate of 8 to 10 gallons of an 85 per cent emulsion to 100 gallons of water. To get the best results, the spraying should be done as late in the spring as possible without danger of injury to the opening fruit buds. If you get entirely satisfactory results with lime-sulphur solution, stick to it



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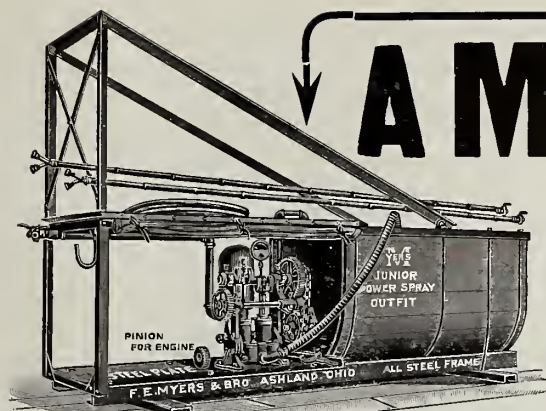
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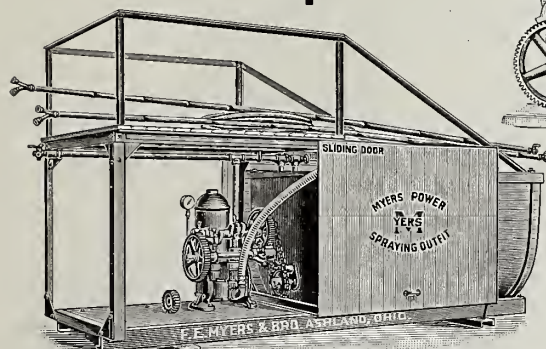
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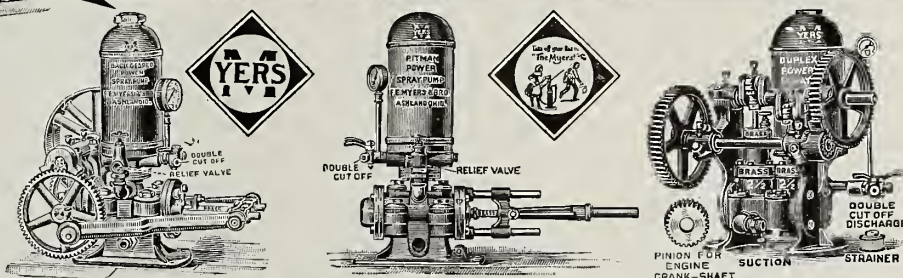
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and use it regularly. If your trees are covered with moss and rough bark, or in case of bad scale infestation and you do not get good penetration with lime-sulphur solution, crude oil emulsion will give better results. If you have oyster-shell scale, scurfy scale, or

any of the large lecanium scales, or if woolly aphis is present, it will, in all cases, be better to use crude oil emulsion.

When the fruit buds have opened in the spring but before the blossoms appear, it is time to spray for scab and mildew, and also to be on the lookout for aphis. The winter eggs of both the green aphis and purple aphis have mostly hatched by this time and, in the case of purple aphis which attacks the fruit buds, most of the injury is done at this stage of bud development. When scab or mildew, or both, are present, use a good fungicide such as bordeaux mixture, lime-sulphur solution or atomic sulphur paste. The latter is a proprietary preparation selling under the name of "Atomic Sulphur," such as is the case with the nicotine preparation called Black Leaf-40. This paste contains pure sulphur in a very finely divided state, put up in paste form without the addition of any lime or other caustic ingredient, and is to be used only during the growing period, and not to be substituted, in any case, for lime-sulphur solution or crude oil emulsion as a contact insecticide for dormant spray. For apple scab it should be used at the rate of 12 pounds to each 100 gallons of water. If aphis is present at the time of the scab treatment, a weak distillate oil emulsion (three per cent) or strong soap solution (10 pounds to 100 gallons of water) or Black Leaf-40 (1 to 1,000) may be combined with atomic sulphur, thus

getting an insecticide and fungicide at the same time. If lime-sulphur solution is used for scab, Black Leaf-40 may be added for aphis; however, neither oil emulsion nor soap solution can be combined with lime-sulphur. This spraying before the buds open is necessary for scab and also important for aphis, in case the eggs are not killed by the winter treatment.

Continued in next issue

Ohio held a splendid apple show, under the auspices of the Ohio State Horticultural Society, which was well attended. Interest in the apple business is being shown by all public institutions everywhere in the United States.

Mr. J. T. Taggard, Dayton, Washington, shipped about fifteen cars of apples this year, which he marketed through the North Pacific Fruit Distributors.

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of Congress of March 3, 1879.

The National League of Commission Merchants held a very successful meeting in Jacksonville, Florida, the middle of January, which was attended by several hundred dealers in fruits. A very strong feeling existed against the cold storage bills now before Congress limiting the period of cold storage for various products. Some people seem to think that the high cost of living can be reduced by limiting the time that a product can remain in cold storage. Fruit dealers are generally pretty sensible people and they do not coincide with this view. They believe in a reasonable limit of cold storage and maintain very stoutly that the limit of cold storage should be regulated according to how long any product will keep in first-class condition. To limit the cold storage of apples would mean an immense loss to the apple growers of the United States. For instance, take the ninety-day limit on apples. Many varieties of apples, we will mention two, the Newtowns and Winesaps, can be placed on cold storage the first of October and be taken out of cold storage in perfect condition during January, February, March or April. To limit cold storage to ninety days from the first of October, at which time most apples go on cold storage, would mean they would all have to be taken out the first of January. Apples taken out of cold storage do not keep very long after being removed, consequently limiting the cold storage period to ninety days would mean that practically the whole crop of apples would have to be eaten by the first of January, and after this date no one would be able to buy good apples. The fruitgrower or any man interested in the fruit business, either directly or indirectly, should exert himself to prevent the passage of any

measure to limit the cold storage to ninety days. The editor has eaten apples of different varieties, such as Newtowns, Winesaps, Red Cheeks, and even Spitzenbergs taken out of cold storage in May, June and July and even as late as August, that were in perfect condition.

Factors That Stand for Prosperity.—

The feeling of optimism is certainly a big factor in affecting business conditions in the year 1914. In the year 1913 "caution" was the watchword of every wise business concern and industry, consequently there has been no overproduction and no dangerous speculation. In fact there has rather been underproduction, consequently there is every reason to assume that business ought to be exceedingly good during the coming year. The war scare over the Balkan troubles naturally created a very unsettled condition, disturbing the financial situation. The war bogey has disappeared and the future looks peaceful, therefore we are justified in looking for no further trouble along this line. Railroads have clearly defined their condition to the Interstate Commerce Commission, and it is probable that the commission fully understands the railroad situation and without doubt will act with good judgment. It is generally known that very little railroad development or improvement work was done during the past two years. In fact last year only about 2,000 miles of railroad was constructed in the United States, whereas in Canada some 17,000 miles was built. The railroad situation has been hampered in some way which is difficult for the ordinary layman to understand. Their contention is that shorter hours and higher wages and reduced traffic rates have made it difficult for them to sell securities, consequently they were unable to do the necessary development and improvement work. They are asking for an advancement of about five per cent in traffic rates. There is every reason to assume that the Interstate Commerce Commission will give the railroads a full hearing and grant the requests if those requests be substantiated by the facts.

Hard Times.—Whenever business becomes depressed, as during the last two years, the situation is made more difficult by many people who become scared and withdraw their money from circulation, hide it away or put it in safety deposit vaults. A friend of the editor informed him that one day when he went to the safety deposit vault to look at some papers another citizen came in and opened up his deposit box, exposing to view about \$10,000 in twenty-dollar gold pieces.

A very interesting article appears elsewhere in this edition, "The Influence of the Panama Canal and Navigable Rivers on the Fruit Industry of the Northwest," by Mr. J. N. Teal, Portland, Oregon. This article contains valuable information and should be read by every grower of the Northwest.

The Panama Canal.—In 1915 the Panama Canal will be open. Already steamship companies are preparing to engage in traffic from the Pacific Coast through the Panama Canal with the Atlantic Coast and all foreign ports. Seaport towns like San Francisco, Portland and Seattle are already active in a campaign to prepare for this ocean business, and from present activity we are justified in assuming that by the time the canal gets to going properly facilities in the way of dockage, warehouses, etc., will be ample in the different seacoast cities along the Pacific to take care of the trade. This means much to the fruitgrower. These cities are already planning to build cold storage plants to care for fruit awaiting shipment. Steamers will be built with refrigerator service and the fruit-growers of the Pacific Coast can look for much lower rates to the Atlantic and export ports than we have ever received in the past. While no definite figures as to rates have been given, officials informed on ocean traffic and who have given the matter much study, prophesy that the rates to the Atlantic and European points will probably be somewhere from thirty to fifty per cent of the present rates.

Consignment and F.O.B. Sales.—During the year 1910 a large part of the fruit business was done on commission basis. Fruit growers did fairly well. On the other hand, it is not claimed that commissionmen made any great amount of money. The 1911 crop was a light one, and again in 1912 nearly all of the fruit business was done on a commission basis. Growers made no money and so far as we are posted none of the commissionmen got rich. During the year 1913 nearly all of the fruit business was done the same way as every other line of commercial business—straight sales at f.o.b. prices at the shipping point, with the privilege of inspection at destination. The result has been that growers have received satisfactory prices and we think we are justified in assuming that the dealers generally have met with a very successful year.

Wall Street a Business Barometer.—Before the dull times of the years 1911-12, before business had begun to get dull, the sale of stocks had decreased and the prices of stocks were going down. This condition is usually followed by depressed business. Stocks recently have been selling in greater volume and prices advancing. Business has not yet increased materially, but the condition in Wall Street foretells almost to a certainty a prosperous condition.

Mr. Wilmer Sieg, sales manager of the Hood River Apple Growers' Association, has been elected an honorary member of the National League of Commissionmen. Mr. Sieg was formerly president of this society and the society paid him a graceful and deserving compliment in conferring this honor upon him.

The New MYERS POWER SPRAYER IS BUILT AS YOU WOULD BUILD IT

had you the facilities and material at our command. It is made up of round bottom wooden tank, equipped with propeller agitator, a Myers Duplex Power Spray Pump and a 2½ (or one) H.P. STOVER GASOLINE ENGINE. It has platform with detachable railing, heavy angle steel frame, sliding doors on cab. It will maintain a continuous pressure of 200 pounds on four nozzles, will turn short corners and can be unmounted so that the truck may be used for other purposes. Let us submit price and circular giving full details of both large and small sized outfits. Mention this paper.



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LEWIS & STOVER CO.

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Spokane
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Prosperity is coming. Steel plants are reopening their doors and orders for steel are now up to normal. The sale of stocks and securities is constantly increasing, prices are advancing and money becoming easier. The tinplate company has withdrawn all prices and will make an advance in the near future. Advice from Chicago states that already the country merchants are writing manufacturers and jobbers asking to have traveling men sent out so they can place their orders. Traveling men in the Northwest report that where it was almost impossible to pull an order last year they are now beginning to find the merchants ready to stock up in a conservative way in advance of the season.

The North Pacific Fruit Distributors at their last meeting of directors passed a resolution to open headquarters in Portland for handling all of the fruit crop which is situated more closely to Portland than to the Spokane offices. This will be a benefit to Portland, as all of the receipts will be cleared through Portland banks.

The Northwest Fruit Exchange is making some very satisfactory returns to fruit growers and is figuring on an increased business for the year 1914. Mr. W. F. Gwin, manager, has been in the East studying conditions with a view to doing everything possible for caring for its patrons to the best advantage.

"American Fruits in Foreign Lands," showing the European and Oriental trade opportunities, by Mr. H. N. Gilbert, Toppenish, Washington. Mr. Gilbert made a trip around the world, taking with him a carload of apples, which he gave away to consuls, fruit dealers and fruit buyers, gaining some valuable knowledge for fruit growers. This article appears elsewhere in this edition and should be read by every fruit grower. He ascertained that apples were selling at \$6 to \$8 per box in many foreign ports during 1910, when fruit growers were getting but fifty cents a box.

Currency Bill.—It seems to be the universal opinion of bankers that the currency bill will be a decided improvement on our past system, affording much more elasticity. With this feeling on the part of bankers and capitalists there is every reason to look for Eastern money to move westward, with a consequent renewal of activity and development in business in the Northwest.

Business in Northwestern Cities.—Merchants and business men generally are reporting that money is somewhat easier.

Universal Orchard Sprays

More mistakes are made in buying orchard sprays than in almost any other line of agricultural work. **Always** consult a specialist who knows what to recommend for each particular insect or fungus. Our entomologist, PAUL R. JONES, is at your service **free**. His experience with the United States Dept. of Agriculture for many years places him in a position to give you **absolutely correct advice**. We handle the most complete line of Insecticides in the U. S. Among the products we manufacture and distribute are

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LIME SULPHUR SOLUTION

Kerosene Emulsion; Miscible Oil No. 1; Miscible Oil No. 2; Miscible Oil No. 3; Sheep Dip; Liquid Whale Oil Soap; Whale Oil Soap (hard); Cresol Soap; 32°-34° Distillate Oil; Black Leaf 40; Arsenate of Lead; Bordeaux Mixture; Atomic Sulphur.

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THE FAIRBANKS-MORSE POWER SPRAYER

Spraying is a science.
So is building a good
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Let us tell you what we
know about it.

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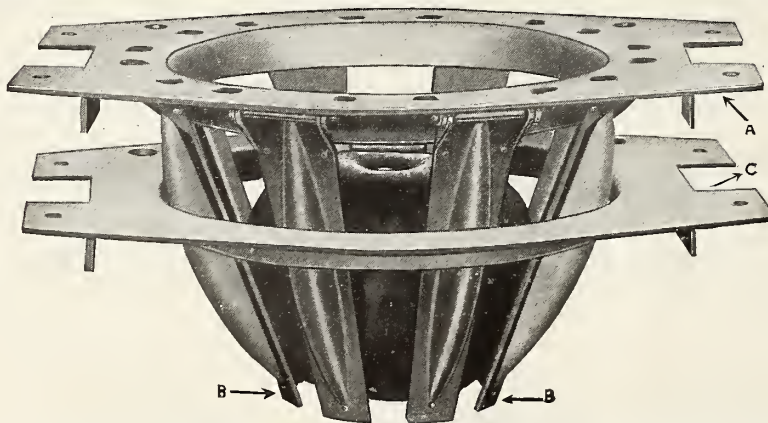
Portland, Oregon

Eastern Financial Condition.—The financial page of nearly every big Eastern daily indicates that prosperity and expansion will soon be with us. Transactions in bonds and stocks on the stock exchange in New York the first week in January were fifty per cent greater than the previous week. President Wilson is making himself clearly understood and business generally is expressing confidence in his judgment and ability. His policy briefly expressed is intended to be constructive and not destructive, and large concerns have nothing to fear, providing they comply with the requirements of the law. President Wilson has signified his willingness to co-operate with the big institutions, and states it is his desire to assist them, not to hamper in any way, but that the law must be obeyed.

The January edition of "Better Fruit" was devoted largely to spraying. Already we have received hundreds of compliments, stating this is the best edition we have ever issued. The articles in the February edition of "Better Fruit" are upon great big, broad subjects that affect every fruit grower, big and little, directly and indirectly, and we believe it is the biggest, broadest and most comprehensive number of "Better Fruit" in a general way for the good of the fruit grower we have ever produced. We therefore urgently request every subscriber to read carefully and study thoroughly every article appearing in this issue.

Hon. H. B. Miller has a very interesting article in this issue on "Co-operation." Mr. Miller is a man who has been in public life many years, having been consul in Tientsin and Belfast, and since coming to Oregon has been engaged in fruit growing. His article is an earnest endeavor to show the value of co-operation to the fruit grower.

Financing is something which fruit growers as a rule do not understand. Mr. Edward Cookingham, vice president of the Ladd & Tilton Bank, Portland, has written a very able article for the readers of "Better Fruit" on this subject, which appears in this edition and which should be read by every fruit grower.



THE SCHELLENGER FRUIT SORTING MACHINE is constructed of 88 sizing gauges (one of which is shown above) with expanding circular openings at the bottom and operates in units of four gauges each upon endless sprocket chains just above the packing tables. The fruit is automatically placed in each gauge and carried along the packing table until the expanding circular hole becomes large enough to permit it to pass through to the table below ready for the packer. This gives absolutely correct cheek-to-cheek sizing to within the one-hundredth part of an inch.

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Wanted Position as superintendent or manager of orchard, either bearing or young trees, by man of 17 years' practical experience in and around Wenatchee Valley. Understands the work thoroughly and can handle men to the best advantage. Am not afraid of work and can make good anywhere. Also understand promoting orchard projects. Best of references. Address D. F., care "Better Fruit."



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Big stock of Best varieties. Write for Catalog and Prices before you buy.

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Telegraph and Telephone Rates.—Fruit dealers, associations, jobbers and growers use the telephone and telegraph very extensively. The International League of Commissionmen are demanding reduced rates. It seems their request is certainly entitled to consideration.

Great interest was taken in the subject of by-products at the Spokane conference. After a very lengthy discussion, which was very interesting and instructive, a committee was appointed. Mr. H. C. Sampson of the North Pacific Fruit Distributors was appointed chairman and Professor W. H. Wicks of Moscow, Idaho, secretary. The executive board being comprised of Mr. J. F. Batchelder of Hood River; Mr. Paul H. Weyrauch, Walla Walla, and Mr. C. J. DeVice, North Yakima. This committee will meet in Walla Walla December 18, during the session of the Washington State Horticultural Society, for the purpose of considering and devising ways and means of procuring processors, managers, bookkeepers and other expert help for by-product factories, and will also endeavor to formulate some plan of standardizing the packs.

Controlling Rabbits

The rabbit is one the greatest pests of the young orchard. At times they are so numerous that the expense of protecting the trees becomes very high. Many different remedies have been tried for this pest. One way is to fence the orchard against the rabbits. One grower in this state at one time reported great success by having a rabbit fence. The meshes were just large enough so that the rabbit could push his head through, but couldn't get it back, and many rabbits were caught in this way. The great trouble with many rabbit-proof fences is that the snow or soil drifts up against the fences and they soon become useless. Tree protectors are sometimes used with fair satisfaction, but in some cases, however, they have not solved the problem. A number of growers report that rubbing the trunks of trees with hog or sheep liver tends to keep the rabbits away; that they do not like the odor from the liver. The liver is applied by hand, using an old glove and smearing the liver on the bodies of the trees.

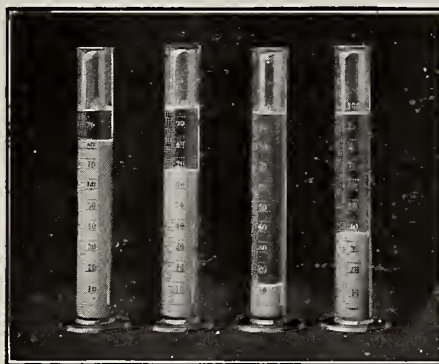
One of the best remedies probably is the lime-sulphur spray, using a good, strong, thick solution of lime-sulphur



"Never used a more effective and lasting spray than *SHERWIN-WILLIAMS* Dry Powdered Arsenate of Lead"

WHY not use Sherwin-Williams Dry Arsenate of Lead and be in a position to say just those words? Surely 'tis better and more profitable than to experiment with an unknown, untried and possibly injurious material.

Proof of the quality of S-W Dry is what you want. Just glance at the photographic reproduction of the test tubes on the left and you have it. This shows a comparison of the suspension qualities of S-W Dry and three others, two dry and one paste, picked at random.



The result of a 15-minute settling test showing a comparison of S-W Dry (on extreme left) with two of the next best Dry Arsenates (to the right) and the average paste last. Same weights of all four materials used.

Note the superior suspension and bulk of the first on the left (Sherwin-Williams). Greater bulk and suspension means a lighter, more fluffy spray material, which must affect increased covering capacity and a more even spraying. The result is a more effective and economical spray.

Our folder, E-341, gives a complete description of this product and mentions why you should use it to make a substantial saving in the cost of spraying. You need this information and a post-card will bring it.



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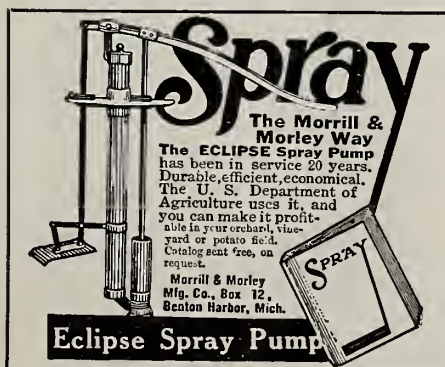
side we shall be pleased to send THE LEADING AMERICAN SEED CATALOG,—a bright new book of 182 pages, which should be read by all who would have the best garden possible and who are willing to pay a fair price for

is sufficient for the front of a post card. If you will write your own address plainly on the other

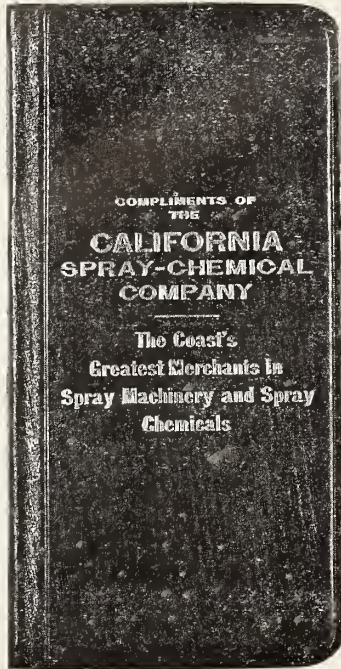
Seeds of the Burpee-Quality

and applying it to the trunks of the trees. A number of growers have reported very satisfactory results by the use of this spray. Where rabbits have been very bad and there has been considerable rainy weather, it will probably be advisable to spray with this solution several times during the season. In fighting rabbits it will generally be found that they are apt to attack

the outside areas of the orchard, or patches of orchard which border on scrub land or patches of wood. The rabbits often feed so that they can run to cover easily, and precautions should be taken to protect these sections of the orchard. It is only by everlasting vigilance and the trial of a number of remedies that one is able to control such pests.



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Luther, and Others, Say: When Ortho Sprays enter upon the scene, pest troubles fly out the back door.

Luther Says: Ortho Lime-Sulphur Solution is the safest, surest, strongest, savingest spray on the market. Best by every test, uniform in quality, clear, put up in non-leaking steel drums, higher in strength than any other Lime-Sulphur Solution, and costs no more than inferior goods.

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Luther Says: Spray, Spray, Spray, but be sure you Ortho Spray.

Luther Says: If you connect up right now with Ortho Sprays, he is mighty sure you will be glad you did. Our hosts of satisfied users will have none but our Ortho goods. They have found them the kind they can always bank on. Make up your mind that Ortho Spray is the spray for your money, and get your order in today. We promise prompt delivery from our various agencies.

Luther Says: Let Cupid meet you face to face. Cupid is our Sales Manager. I am a very busy man, among very busy men, busily making Ortho Sprays in the largest spray factory in the world, but it will be well worth your while to clip the coupon and mail it to me.

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California Spray-Chemical Co.

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Watsonville, Calif.

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But economy is not everything. Efficiency is more important. What would it mean to you to have a spray mixture of standard strength and be absolutely sure that all of one spraying or of many sprayings was absolutely the same strength? Evaporation, difficulty of perfect mixing, make this impossible with a paste arsenate. You can have a standard efficiency if you use *Corona Dry*.

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Quickly and easily mixed. No working up—no straining needed—no sediment. No lumps. No waste. Never clogs spray nozzle. Highest per cent. of actual killing power. Absolutely safe, will not burn. Sold in net weight packages: 200 lbs., 100 lbs., 50 lbs., 25 lbs., 5 lbs., 1 lb. No shrinkage, seepage, evaporation. Every package contains actual net weight of "Corona Dry" paid for.

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Marketing of Fruit from the Banker's Standpoint

Mr. Edward Cookingham, Vice President Ladd & Tilton Bank, before Oregon State Horticultural Society, December 11, 1913

BOTH houses of the United States Congress have in effect tagged the bankers of the country as "undesirable citizens." Just why they should have done so I have never been quite able to understand, and the justice of their action may be open to question, because all that the bankers have done is to tell the committee of Congress some plain truths about economic questions. Most of you gentlemen are fruitgrowers, but I think most of you likewise belong to that great species in the community known as borrowers, with whom I come in contact very frequently. As Colonel Dosch

has said, the financial aspect of the fruit business is a very important one. It is of importance to you because it is to make money, to make a living, that you are engaged in that industry, unless you are wealthy enough to be able to raise fruit for the mere pleasure and glory of doing so.

In thus addressing you I may say some things that will perhaps strike you as being unpleasant and some things that may impress you as being unusual and possibly untrue, but remember that I am speaking to you from the standpoint of the man in the bank, the man behind the shovel with which the coin is shoveled out to you when you want it. Of all the multitudinous and complex duties that go to make up the daily life of a banker I do not think there is any which is fraught with more difficulty than the constantly recurring task of instilling into the minds of the borrowers the proper relationship that should exist between the bank and its borrowing clients. Occasionally we meet a customer who displays almost human intelligence when discussing his financial needs with his banker, but as a rule they have only the haziest ideas of what constitute the true functions of a bank. Of course, the predominating thought in the mind of any customer applying for a loan is

that he needs the money, he wants the money and he is going to get it if he can. The fruit man does not care what the lumber man, the wool man, the hop man or the salmon man wants. What he wants is money for the fruit business. He is dependent upon it to pro-

YOU CAN EARN \$50.00 PER DAY with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W 8. REIERSON MACHINERY CO., Manfrs., Portland, Ore.

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Offer a general line of nursery stock propagated from the best bearing trees in Hood River. Seventeen years in the business enables us to grow, dig and pack trees in a scientific manner.

We guarantee satisfaction.
Commercial orchards a specialty.
Write for direct-to-planter prices.

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Strong, Vigorous LOGANBERRY Tip Plants

Grown from the tip of the strongest vines in a well cared for yard. Our prices are reasonable.

ASPINWALL BROS.
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Choice fruit trees of the leading varieties, small fruits and ornamental stock at reasonable prices, direct to the planter. Send for price list.

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The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

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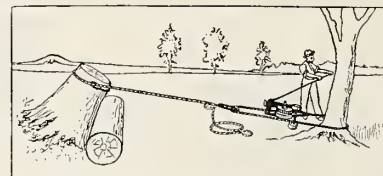
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vide the means of income for himself and his family, and that is the only important question to him for the time being. Naturally everything that the borrower says, when he assumes his most persuasive attitude and sweetest smile as he faces the banker, is colored more or less by that feeling. Now do not interpret that, please, as a reflection on anybody's honesty, especially present company, which is always excepted, but the banker who has had long experience will tell you, and it is true, that it is always necessary to discount very largely the statements and figures that are submitted to bank officers by prospective borrowers. Usually we try to cut the statements in half and then divide the remainder by two. Bankers have very little partiality in loaning money. All the banker wants is good business. The loans that are submitted to the banker must be characterized by several things which are fundamental. I am giving you these generalities now and will specialize on the fruit business a little later, because I desire to assure you that as borrowers you are right in the same boat with the rest of them. You can't get any special favors from the bank by reason of being in the fruit industry. You must stand on your merits, and when you do not stand on your merits you are going to suffer in the minds of the banker, as I shall point out to you a little later in a more definite way.

What are the qualities that must characterize all loans? Some of these things may seem elementary to you, but I will recount them because it is well that you have a clear grasp of the financier's point of view. First, it must be an entirely safe loan; in other words, if the loan be unsecured the financial responsibility of the borrower must be ample and his character high; or, if secured, the security must be of unquestionable quality. Second, the loan must be made on a basis that will yield the banker some net profit. Third, the banker must have a reasonably certain assurance of its repayment at a definite and certain date. Fourth, as far as practicable it must yield a direct benefit to the bank in the shape of a deposit account or some advantage equally beneficial. If in making a loan the banker can discern that some benefit is likely to accrue to the community in which his bank is located, that is an additional source of satisfaction to the banker; but it is not, per se, a sufficient justification for making the loan if stripped of the other requirements.

In determining the value of loans, these questions pass very rapidly through the banker's mind. It is perhaps well that I should emphasize this at this time because, as I have stated, the relationship of the banker to the fruit industry is not, in a general way, different from that which he sustains to other lines of trade and industry; and inasmuch as the banker is obliged to set the standard which must govern all loans, including those made to fruit-growers, and inasmuch as that standard is founded upon the fundamental prin-



THE K Hand-Power Stump Puller

With this machine one man can pull 48 tons with a double block and 24 tons with a single block.

With this machine a cedar stump four feet in diameter at the base can be pulled out of the ground in one piece in five minutes, from hard soil.

This machine weighs 171 pounds with sixty feet of cable on the drum.

A stump can be pulled sixty feet without changing the rigging.

This machine will pull as large a stump as any horse or steam machine on the market.

It will break the best inch cable sold if the stump to be pulled doesn't yield.

These statements are guaranteed to be the absolute truth and if the machine will not do as represented we will refund all moneys paid.

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The machine is guaranteed for one year. If it breaks from any cause it will be repaired without any questions asked.

A WOMAN can pull more with this machine without any blocks than any team of horses in the state can pull without any blocks. This statement is guaranteed.

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Standard Varieties

Prices Right and Stock First Class

C. D. THOMPSON, Hood River, Oregon



Stop at "The Oregon," Hood River
Clean Rooms—Excellent Meals—One block from depot

For Sale 100,000 One-year APPLE TREES

Grown from Whole French Seedlings.
Retail and Wholesale. Write

APPALACHIAN NURSERIES

Tallulah Falls, Georgia

RHODODENDRONS

and Northwest Native Plants are good for potting in the home, office or porch and planting out in the lawn or garden. I collect them from forest and logged lands. Prices range from 3 cents to \$1.00 each. Varieties and prices given on request.

JOEL SHOMAKER, Nellita, Washington.

ciples of banking and upon certain economic laws, it is altogether desirable that you be advised upon just what basis the fruit business must rest before it can hope to assume its proper relationship to the business of its important co-adjutant—banking. Now let me make clear to you the position of the banker, the statuts that he occupies and the function that he fills in the community. The banker must always be alert for danger. He must be adept in diagnosing financial disease, keen in discovering weaknesses in the borrower's financial position, and must always not only be looking, but prepared, for the worst that can happen. He must not only keep in touch with the local conditions but must be watchful of the financial horizon, both at home and abroad. The banker's moral responsibility is tremendous. He feels that he is a trustee not only for his depositors and stockholders but for the entire community as well. And so it is that when a banker sometimes displays hesitation in making loans during periods when funds are needed by bor-

AN EXPERIENCED ORCHARDIST

wants a position as manager or foreman of an apple orchard. Have had experience in irrigation. Can handle either young or bearing orchards. Have had some experience with small fruits. Two years University of Illinois Horticulture. Ten years experience, one in Idaho. Best of references. (Address) H. O. HINKLEY, DuBois, Illinois.

FOR SALE 45-acre income orchard. 32 acres in fruit; apples, peaches and cherries mostly. All in bearing but about 400 apple trees. Net income over \$3,000 in 1913. Practically new 10-room house with furnace heat. Houses for 500 laying hens. Only a few hours from Chicago, boat or rail. Just outside limits of good town, ¾ mile from lake. Write for details. No trade. J. E. HARRINGTON, Sycamore, Illinois

Fruit Farms in Delaware

Are so close to the big markets that each individual grower can sell his own fruit and take advantage of the highest prices paid for fancy fruit. For information address The State Board of Agriculture, Dover, Delaware.

To Real Estate Agents and Brokers

We have for sale one of the best combined fruit and stock ranches in the Rogue River Valley, Southern Oregon. Over 1,500 acres ideally located; 6,000 fruit trees of standard varieties just coming into bearing, everything else in first-class condition. Partners wish to dissolve and will sell at great sacrifice. For full particulars and blue prints address

CUNNINGHAM & CO., Ashland, Oregon

BERRY PLANTS

BEST AND CHEAPEST

Illustrated Price List

LOUIS F. SCRIBNER

Department B Pasadena, California

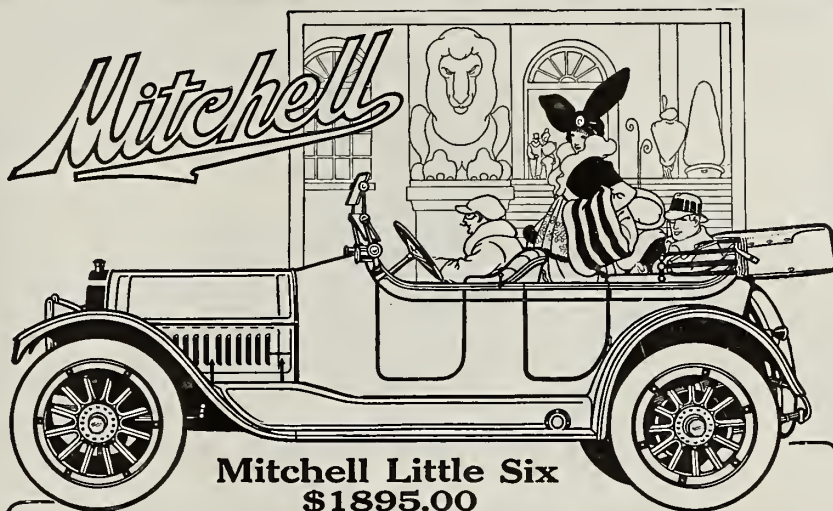
GET NEXT

to our bargain list of Choice Fruits, Flowers and Forestry Stock. For \$1.00 cash we will send you postpaid, 6 each, Carmen and Elberta peaches. Nice, stocky little trees. For \$5.00 cash we will send 50 each Carmen and Elberta, the leading market peaches today, postpaid. Get our Bargain List now.

Western Department

Atlantic Nursery Co., Inc., Berlin, Maryland

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



Mitchell Little Six
\$1895.00

Recognizing the fact that the modern farmer is as much of a *business man* as the merchant of the big commercial center, we call the former's attention to the *established truth* that the Mitchell car is an *investment* and in *no sense a speculation*. Not only is the car manufactured to last but its maintenance is economical—a fact that any man of business sense will thoroughly appreciate.

The principle of maximum power on minimum fuel is exemplified to a high degree in the Mitchell Models for 1914 and the strength of axles, frame, springs and other important features is calculated to resist successfully and repeatedly the severe strains and jolts and twists of rough country roads.

Such facts *must* be considered carefully to preserve an automobile as a daily utility and prevent it from becoming a costly luxury. Your Mitchell of today will be looking well and serving you faithfully several years from now and thus annually the cost of your original investment is decreased until it finally disappears.

The Mitchell Models for 1914:

The Mitchell Little Six—fifty horse-power—132-inch wheel base—36x4½ inch tires—two or five passenger capacity - -	\$1,895
The Mitchell Big Six—sixty horse-power—144-inch wheel base—37x5-inch tires—seven passenger capacity - - -	\$2,350
The Mitchell Four—forty horse-power—four cylinders—120 inch wheel base—36x4½ inch tires—two or five passenger capacity	\$1,595

Equipment of all the Mitchell Models Included in the List Prices Here Given

Electric self-starter and generator—electric lights—electric horn—electric magnetic exploring lamp—speedometer—mohair top and dust cover—Jiffy quick-action side curtains—quick-action rain vision wind-shield—demountable rims with one extra—tungsten valves—double extra tire carriers—Bair bow holders—license plate bracket—pump, jack and complete set of tools. Prices F. O. B. Racine.

Mitchell-Lewis Motor Co.

Racine, Wis., U.S.A.

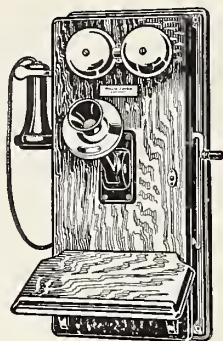
Eighty Years of Faithful Service to the American Public

rowers for the legitimate requirements of the community, it may be that there are signs visible to him on the financial horizon which his borrowing clients have not yet discerned.

One of the most important of the loan requirements which I have just enumerated, and the one which often causes the banker to display the most hesitation and doubt, is the question of the date of repayment of a loan. Here the banker and the borrower are frequently very wide apart in their views. The customer believes he is good for the loan he is asking; he knows he is honest; he knows that the loan is safe, and he thinks with that the banker should be content. But the banker realizes that what he must have is a reasonably liquid loan and that, no matter how good the borrower may be,

it is no part of the function of a bank to supply fixed capital to its customers or to promote private projects by advancing funds which are to be used by the borrower for a long and indefinite period.

It is an old axiom that no banker should extend credit upon any other terms than those under which he receives it. That means that the banker has no moral right, no banking right, to accept deposits payable on demand and loan them, except to those who can repay the loans on demand. Of course a literal application of that rule is not possible and it is not generally followed in practice, except perhaps in one place in the United States, and that is New York City. In our locality it is a moral impossibility for the banks to follow such a rule, but you can ap-



The Right Kind of Telephone Service

You must have good apparatus to have good service. Farmers have learned that in buying equipment for their neighborhood telephone companies it does not pay to put price before quality. A cheap instrument that works only in good weather is likely to fail in an emergency when you need it most.

It's always safe to buy, or to specify,

Western Electric Rural Telephones

They are made to the standard of all "Bell" telephone equipment, and made by the same manufacturers who make all of the instruments used by the Bell Telephone Company.

Before you buy any telephone equipment or replace any instrument that may be now in use, write to our nearest house, as listed below, for our new illustrated book on rural telephones. Ask for book No. 145.

WESTERN ELECTRIC COMPANY

Manufacturers of the 7,500,000 "Bell" Telephones

New York	Atlanta	Chicago	St. Louis	Kansas City	Denver	San Francisco
Buffalo	Richmond	Milwaukee	Indianapolis	Oklahoma City	Omaha	Oakland
Philadelphia	Savannah	Pittsburgh	Minneapolis	Dallas	Salt Lake City	Seattle
Boston	Cincinnati	Cleveland	St. Paul	Houston	Los Angeles	Portland
New Orleans						

EQUIPMENT FOR EVERY ELECTRICAL NEED

precipitate that a banker must be in a position at all times to pay his demand deposits on demand, and that is why the viewpoint of the banker is so powerfully affected by this question of repayment of loans. It is the line of demarcation between the borrower and the lender, between the customer and the banker. I might mention instances where disaster has come upon great institutions that have violated this great financial principle. I will cite but one, that of Baring Brothers of London. In the early eighties they changed the character of their banking business from commercial banking to speculative or investment banking. Formerly this had been one of the great banking houses of the world, dealing almost wholly in commercial paper. The head of the house made up his mind that he would abandon commercial banking and go into speculative banking business. He believed there were much greater profits in it, especially in handling investments in distant countries. A few years afterward the great house of Baring Brothers went to the wall. It was only by the powerful support given to the financial world by the Bank of England that a tremendous panic was averted. This incident, by the way, furnishes a very striking argument in favor of a central banking system which the bankers have been advocating so long.

It is no part of the business of a commercial bank to make loans on mortgages. Such loans should be made by savings banks, insurance companies, Scotch loan companies and other concerns which make a specialty of that business. The conditions prevailing last year operated as a tremendous handicap to the fruit-growing industry of this state, especially in certain particular sections; not only that, but it affected the confidence of the bankers in those sections and in the industry itself. I am not now criticising you for those conditions, but am merely citing the facts. Last year's conditions illustrated the principle which I wish to impress upon you as fruit men, and that is this: that the money of a bank which can be devoted to the fruit industry during the seasonal period, or any other period, is to a certain extent limited, inasmuch as it is necessary for the banks to take care of other lines of business besides the fruit industry. If we set aside a certain allotment of our loanable funds for the fruit industry, when that amount has been used, we are up against a stone wall; we must stop. With twenty-five thousand banks in the United States contending against one another for reserves of gold, whenever trouble threatens, we are obliged to make our money go just as far as we can in handling each particular industry.

Now what did the fruit industry do for me? It tied up a lot of my bank's money. Instead of turning that money over, as I should have, two or three times in the season, much of it I never turned over even once. Please do not forget that the spread of money over a specified territory for a given industry

MOUNT ARBOR NURSERIES

E. S. Welch, Proprietor—130 Center Street, SHENANDOAH, IOWA

Make a Specialty
of a
Complete Line
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General Nursery
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FRUIT TREE STOCKS

Apple and Pear GRAFTS Made to Order.

Blackberries, Dewberries, Currants, Gooseberries, Grapes, Raspberries—all the best varieties.

ROSES—Crimson Rambler, and a full assortment Hybrid Perpetual, Moss and Climbing.

Ornamental Trees, Shrubs, Vines, Bulbs, Forest Tree Seedlings.

Large Assortment of Stock in Storage for Winter Shipments

One of the largest and best equipped Nursery Plants in the UNITED STATES

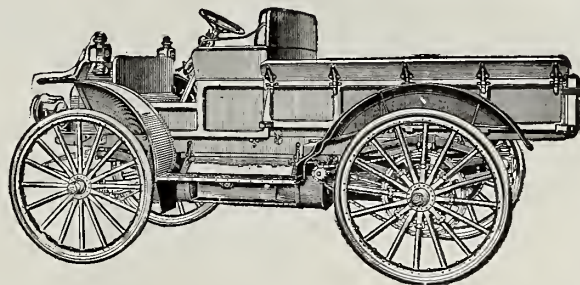
LET US QUOTE YOUR WANTS

multiplies itself in the proportion that it is turned over by the banks in the harvesting season. Now, when you borrow \$5,000 or \$25,000 or \$100,000 from me and keep that money during the whole season, you are depriving yourself or somebody else of perhaps three or four times the use that could be made of that money, if you could so order your affairs and so handle your business that it could be turned over three or four times in a season. That is a practical illustration to show how your marketing methods become closely associated with the financial help that you must have from the bankers. If you are going to continue to make one loan carry you over months and months, then the power of the banks to help your industry is restricted just that much. When such a condition prevails in the fruit business, the bankers naturally are not inspired by any feeling of confidence that a fruit loan can very readily be paid if unexpected demands should be made on them by their depositors. Hence the banker is forced into an attitude of mind that acts as a two-edged sword against fruitgrowers at all times. This is a very positive truth, and one which I trust you will take to heart very seriously, because you are the people who are going to suffer if you can't get together and arrange to solve some of these difficulties which now confront you. Stated briefly, the conditions which I have recited have caused loss of prestige to the fruit industry, so that from the banking standpoint it does not measure up to the standard of the other stable industries of this section.

I trust I am not hurting your feelings individually. I am merely stating bare facts. There are some underlying causes which contribute to this condition and I would like to dwell briefly upon them. You may know them, possibly, but it will be well to go over them while we are all assembled together. First, the fruit industry is comparatively new as a commercial proposition and is at present far from being a scientifically developed commercial industry. Second, much patience and conscientious labor, and a period of seven or eight years' time, are required to develop a fruit orchard that will produce in commercial quantities. Third, the remoteness of our fruits from the markets of the world is a truly tremendous disadvantage which has not yet been overcome by the marketing methods in use up to the present time. Fourth, there is a lack of cohesive and co-operative organization for marketing your product. Fifth, fruit is a perishable product, and for this reason is distinctly inferior as banking security to such commodities as wheat, lumber, wool, cotton and corn. Sixth, present methods which compel storage of fruit in Eastern centers add to the cost, and this is a serious handicap to the business.

Last evening I was talking with a gentleman at my home who had recently returned from Europe. He had just arranged to send twelve or fifteen boxes of Spitzenberg apples back to

International Harvester Motor Trucks



THE IHC LINE GRAIN AND HAY MACHINES

Binders, Reapers
Headers, Mowers
Rakes, Stackers
Hay Loaders
Hay Presses

CORN MACHINES

Planters, Pickers
Binders, Cultivators
Ensilage Cutters
Shellers, Shredders

TILLAGE

Combination,
Peg and Spring-Tooth,
and Disk Harrows
Cultivators

GENERAL LINE

Oil and Gas Engines
Oil Tractors
Manure Spreaders
Cream Separators
Farm Wagons
Motor Trucks
Threshers
Grain Drills
Feed Grinders
Knife Grinders
Binder Twine

"I HAVE used your International motor truck daily over a route eighty miles long, through winter and summer, for the last four years, and have never missed a trip," writes one man.

Service such as this man got would add much to the profits of your fruit business, by handling your fruits rapidly at the right moment, and cutting down your general hauling expenses. An International motor truck would give you such service. Many fruit growers, realizing the advantages and economies to be secured, have long been successfully using the light running, durable International motor truck.

The solid tires cut down tire troubles. The motor is simple and has plenty of power for emergencies. The brakes are safe on any hill. The ignition system is of the best. One lever controls the car. The International is built to save you money.

Let us show you all that an International motor truck will do for you. Drop a card today for catalogues and full information to the

International Harvester Company of America (Incorporated)

Denver—Helena—Portland—Spokane—Salt Lake City—San Francisco
CHAMPION DEERING MCCORMICK MILWAUKEE OSBORNE PLANO

SHIPPERS

In planning for next season's business, do not overlook the opportunity to *get next* to Eastern and Southern Buyers and *do your own business direct with them by taking a Membership in the Produce Reporter.*

You should at least write for particulars and *learn how to eliminate and save some of the unnecessary middle-men's profits.*

That's the answer to *your* problem!!

It's in line with present day requirements!

PRODUCE REPORTER CO.
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Sunshine Lamp
300 Candle Power **FREE**
 To Try in Your Own Home
 Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls Churches. A child can carry it. Makes its light from common gasoline. ABSOLUTELY SAFE.

COSTS 1 CENT A NIGHT
 We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.

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BUY AND TRY

**White
River
Flour**

MAKES

**Whiter, Lighter
Bread**

Orchard Yarn

For supporting Fruit Trees of all kinds; also tying up Grapevines and Berry Bushes.

The best time for using the Twine is when pruning and trimming. The method is modern and economical.

Made in 1 and 2 ply yarn. The 1 ply runs about 200 ft. per pound, the 2 ply 100 ft. The 1 ply is suitable for small trees, grapevines and berry bushes. The 2 ply for larger trees and heavier work. Put up on 10 lb. spools, 5 to a package; also in 5 lb. balls, 10 to a sack. Orchard yarn is always **Tarred**, unless otherwise specified.

Supplied by all nursery stock dealers.

Manufactured by
The Portland Cordage Co.
 Portland, Oregon

**Vehicles and
Agricultural Implements**

THE BEST OF
 ORCHARD AND GARDEN TOOLS
 A SPECIALTY

Gilbert Implement Co.
 HOOD RIVER, OREGON

his relatives in Austria, as he has done for several years, and each year he has tried a different method. The only plan he has found successful is to write to one of the large concerns in New York City, purchase the apples from them and order them shipped to their destination in Europe. I think it costs him something like \$5.50 or \$6.00 a box, perhaps more. I do not know whether such a condition is necessary or not, but it is certainly bad. That man lives within gunshot, so to speak, of Hood River Valley and yet he is unable to buy apples here and ship them successfully to Europe, but must go to New York City and pay a profit to the New York merchant and pay the cost of shipping the apples to Europe from there, which probably will be as great as the rate will be from Portland to Europe by way of the Panama Canal. These constitute the main reasons why there prevails among the banks as yet a lack of that confidence which is necessary to insure the regular seasonal financing of any commodity by making it entirely acceptable as a basis for loans. These are some of the disadvantages which affect fruit growing as a business.

Now what are some of the remedies which can be applied in order to make the fruit industry a source of profit to those whose capital is invested in it and a stable business in the eyes of those who finance it from year to year? Perhaps I could not do better than to stop my remarks here and say that, as a financial man, I echo the recommendations made by Mr. Miller and Mr. Averill. They have covered the ground completely from their respective standpoints, but I will read the recommendations which I have to make for the purpose of convincing you that these are my independent thoughts and were written down by me before I knew what would be said here by these gentlemen. First, I recommend that you give the widest and most careful study to the costs of production. Before you market your crops you have got to produce them, and the question of the cheapness of production cost is in your hands. The great distance which separates our orchards from the markets of the world makes it especially incumbent upon our growers that they practice the utmost care, thrift and prudence in the growing of their crops consistent with obtaining the quality of fruit desirable. One of the great creditor nations of the earth is France, and, as Mr. Miller has said, the basis of its financial strength is the thrift and prudence of the French peasant. The practice of economies in fruit growing may mean, in some years, the difference between loss and a net profit. And, just here, I want to impress upon you one vital principle which I hope you will take to heart. It is this: When you have placed the industry, by your own methods, on a basis where it is fully stabilized, and when fruit is being produced at a maximum state of efficiency, which means at the lowest possible cost, then capital

"Star" Orchard Ladder

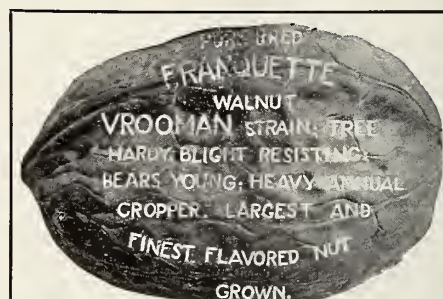
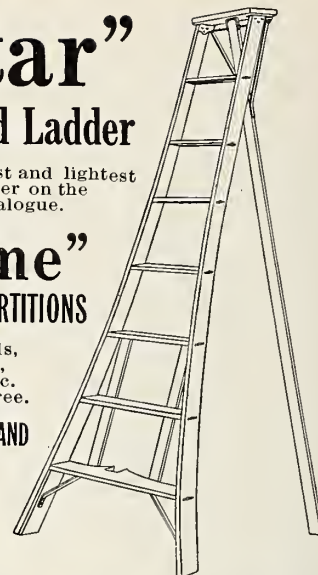
The strongest and lightest orchard ladder on the market. Catalogue.

"Acme" ROLLING PARTITIONS

For schools, churches, homes, etc. Booklet Free.

UNION BLIND AND LADDER CO.

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 OAKLAND
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Vrooman Franquette Walnuts

A prominent doctor of Portland, writing us recently concerning Vrooman Franquette Walnuts, said: "I have asked several grocers what proportion of walnuts they sell as compared with other nuts, and the average is TWELVE TIMES AS MANY WALNUTS AS ALL OTHER NUTS COMBINED. People are beginning to know the food value of walnuts, and when they realize that ONE POUND OF WALNUTS LIKE THE VROOMAN FRANQUETTE CONTAINS AS MUCH NUTRIMENT AS THREE POUNDS OF BEEF OR MUTTON there will be more eaten and some of the high cost of living will be solved."

If you have room for some walnut trees, you will find them the best investment you ever made. Our trees are large, heavily rooted, healthy—first class. Why not order some trees at once and have them delivered for planting this spring. We have all varieties of other fruits also.

Oregon Nursery Co.

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Reliable salesmen wanted.

Reliable Certification Insures
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The Ballygreen System of Pedigreed Fruit Trees

enables Planters to secure selected strains. Endorsed by leading Horticulturists and Fruit Growers.

Write for Booklet.
 Read Endorsements
Ballygreen Nurseries, Hanford, Wash.
 Salesmen Wanted.

and money will seek you. I have been informed that large canneries have investigated the Northwest looking to the suitability of erecting a packing factory. They have left here and gone elsewhere because they felt that they could not be assured of a steady production for the operation of their canneries. I know in my own experience that the fruit canneries here have been run in a very fitful, unprofitable way. I have never seen any here that were operated successfully. So I want to impress upon you that capital seeks any business that has been put on a profitable basis. Capital follows that business just as it follows the flag. You must always keep before you the thought that you must put your industry in shape to attract capital, and you will get plenty of money.

The second of my recommendations is this: That no stone be left unturned to perfect a co-operative organization for the marketing of your fruit crops; an organization which will be permanent and which will command the unqualified loyalty of every grower in this section. The importance of this, in my estimation, transcends all other features of the fruit industry. If there be any one among you who believes that individually he can stand alone, let him cast that hallucination to the winds, for it is quite certain that, situated as we are, something of a "bar sinister" will stand against the fruit industry in this section of the country, until there is the most complete co-operation that human ingenuity can devise looking to the establishment of the broadest possible markets for your crops; and only through such an instrumentality can you hope to realize your desire to place fruit as a commercial commodity in the class for stability with wheat, lumber, corn, cotton and like products. This co-operation must be accomplished by means of some such broad and comprehensive plan as has been outlined by the gentlemen who have addressed you this evening. Such a co-operative power, as a factor in bringing about the maximum efficiency in your marketing methods will scarcely be inferior in effect to any other influence which may be brought to bear upon existing conditions. "Good as wheat" is a very old saying in banking circles; let your slogan be, "As good as fruit."

Beyond giving you these broad recommendations there is little that I or any other banker can do for you. I repeat, that the perfection of your growing methods, the economizing of costs and the development of wide and steady markets under all conditions will alone bring about that Utopian status of the fruit business which will make it attractive to the banks. Of necessity, negotiable paper whose value rests upon a product of the soil which is characterized by off years, by insecurity and uncertain markets, will not appeal to banking interests as effectively as paper backed by those commodities which have been established on firm foundations for long periods of time. I hope I have said some things

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

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NORTH YAKIMA, WASHINGTON

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ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents: **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

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Dependable Brand Lime and Sulphur Solution

THE SPRAY YOU WILL CONTINUE TO USE.

The oldest brand now on sale in this community. Our continuous production of a high grade pure solution has made friends for Dependable Brand wherever it has been used. Prices quoted f.o.b. Salem, Portland, or delivered

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PERFECT FRUIT IS ASSURED

If you Spray with

SWIFT'S**ARSENATE OF LEAD**

Highest Quality—the Pioneer Brand.

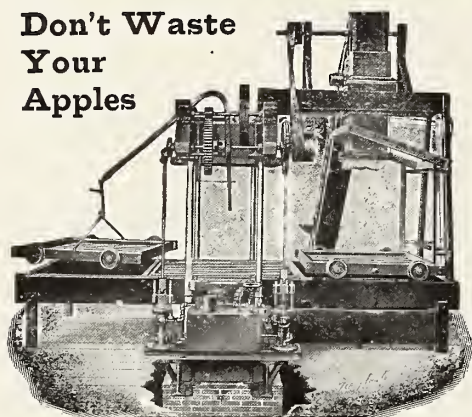
Not always lowest in price but cheapest in the end;—used the world over.

FOR SALE BY LEADING DEALERS EVERYWHERE

MERRIMAC CHEMICAL CO.

Send for Apple Book.

45 Broad Street, Boston, Mass.

**Don't Waste
Your
Apples****Mount Gilead
Cider Presses**

Are Big Money Makers

Sizes 10 to 400 barrels daily, hand or power. We make a complete line of cider evaporators, apple butter cookers, vinegar generators, cider and vinegar filters, spraying outfits, etc. Fully guaranteed. We manufacture Hydraulic Presses and Pumps for all purposes, including olive and castor oil presses. Our line covers every type of press required for high pressure purposes. Write for catalog.

The Hydraulic Press Mfg. Co.

60 Lincoln Avenue, Mount Gilead, Ohio

**Shippers of Fancy Western Box
Apples, Peaches
Plums and Pears****MYERS, WEIL & CO.**

DISTRIBUTORS OF

Western Box Apples, Peaches, Plums, Pears, Etc.**750 Broadway, CLEVELAND, OHIO**

desiring reliable quotations and information concerning conditions in the sixth largest market in the United States, communicate with us promptly.

SPECIAL FEATURES — Absolute Financial Responsibility, Competent Service. No house in any market excels us in making prompt remittances when shipments are sold. Always glad to make liberal advances on consignments.

Apples Will Make You Independent

Many good orchards in Virginia and North Carolina are worth \$1000 an acre. You can buy good apple lands for as low as \$15 an acre. Secure a few acres and plant in apples. In a few years time you will be rich. The climate here is delightful and living conditions are ideal. Good schools and churches. Short winters. No blizzards or cyclones. Abundant rainfall—average 4 inches monthly in 1913. Write today for list of small and large farms that can be bought for \$10 an acre up on easy terms, also for our illustrated magazine, maps, etc. Prices of good lands are rapidly advancing. Write at once.

F. H. LaBaume, Agricultural and Industrial Agent, NORFOLK & WESTERN RAILWAY
Room 228, N. & W. Railway Building, ROANOKE, VA.

**Fruit Trees! Fruit Trees!**

Fruit and Nut Trees, Ornamental, Evergreen and Deciduous Shade Trees
Berries, Grape Vines, Flowering Shrubs, Palms and Roses.

The best that care and experience can produce.

Northern California Grown

Write and get our prices. You will find them as reasonable as any, considering the quality. Remember a cheap tree is dear at any price.

CHICO NURSERY CO.

Phone 170

Cor. First and Cedar Sts., CHICO, CAL.

that will open your eyes to the fruit industry, as viewed from the standpoint of the banker and his relationship to it. But I hope you will accept what I have had to say in the spirit in which I have spoken, which is one not of criticism but of kindly counsel.

Clean Up Your Packing House

The fruit crop is out of the grower's hands and is now practically in the hands of the buyer and consumer. The grower will soon be turning his attention to pruning, spraying and the other regular winter routine work in the orchard. One of the duties which every fruitgrower should remember, however, is the thorough cleaning out of the packing house. It is not uncommon to go into packing houses in the spring and find boxes of decayed fruit in which there has been an accumulation of rotten apples, cores, fruit juices, etc. These accumulations of fruit breed diseases. Many rots, mildews and molds breed under these conditions and you are simply maintaining a breeding ground for diseases which may trouble your fruit the following fall.

All decayed fruit should be removed and the houses thoroughly cleaned out. In many cases it will be wise to scrub off the benches and floor with hot water and soap, formaldehyde or some other cleanser or disinfectant. Clean up all the dirt and leave the houses in spick and span shape for the next fall's work. At that time you will not have any time to fix up the packing house. It is well to have the packing house windows screened, as it has been proved over and over again that the packing boxes and fruit left in the house are sought by the codling moth, and that large quantities of these moths come from these packing houses in the spring to lay eggs and cause trouble in the orchard.

Traverse City, Michigan, is showing a great interest in the fruit industry of that state. Mr. L. F. Titus, cashier of the First National Bank, has been a great helper in giving prominence to the fruit industry and in assisting the fruitgrowers in every way possible. We hope the day is coming when bankers in all fruit sections of the country will take the same amount of interest in the fruitgrowers' business—many of them are already doing so, more should. In November the First National Bank of Traverse City gave a splendid apple show in their large banking room, having on exhibition 465 plates of five apples each, showing seventy of the principal varieties of apples grown successfully in the State of Michigan. Hundreds of strangers viewed this exhibit with keen interest and pleasure. It gave them an insight into the apple industry, and many were surprised with the splendid exhibit and pleased with the progressive steps being taken by Mr. Titus.

Planet Jr.



No. 25 Planet Jr Combined Hill and Drill Seeder and Double Wheel Hoe, Cultivator and Plow

A capital implement for large-scale gardening especially. It has steel frame, and complete seeding and cultivating attachments. The hoes run close to row without danger to leaves or roots. Two acres a day can be easily worked with this tool.



No. 16 Planet Jr Single Wheel Hoe, Cultivator, Rake and Plow

The highest type of Single Wheel Hoe made. It is light, handy, and adapted to use by man, woman, or child. Has leaf guard for close work, and a durable steel frame. A most useful tool in the family garden that makes the work really a spare-moment pastime.

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The best-known cultivating implement made. It is so strongly built that it withstands incredible strain, yet it is light and easy to handle. Has new steel wheel—will not clog with stones or trash. Cultivates to any depth and adjusts to any width. Opens and closes furrow, and hoes right up to plants without danger of injuring them.



No. 4 Planet Jr Combined Hill and Drill Seeder, Wheel Hoe, Cultivator and Plow

This is a practical every day time-, labor-, and money-saver. It combines in a single implement a capital seeder, an admirable single wheel hoe, furrower, wheel-cultivator, and a rapid and efficient wheel garden plow. Sows all garden seeds in drills, or in hills 4, 6, 8, 12 or 24 inches apart.



No. 11 Planet Jr Double Wheel Hoe, Cultivator, Plow and Rake

The greatest cultivating tool in the world for the grower of garden crops from drilled seeds. It has steel frame. The plow opens furrows for manure, seed, etc. and can be reversed for covering. The cultivating teeth are adapted for deep or shallow work and for marking out. Crops can be worked both sides at once until 20 inches high.

The Marketing of Fruit from the Producer's Standpoint

Hon. H. B. Miller, before Oregon State Horticultural Society Banquet, at Portland Commercial Club, December 11, 1913

FROM what I have to say I feel that there is no necessity for me to explain to you business men who are gathered here tonight that the City of Portland and its business interests, and those of the state, are intimately allied with the success of the fruit industry. I do not think it necessary for me to enter into that subject nor to point out to you the benefits you are already getting and the great benefits you are sure to get in the future provided the fruit-grower of the state prospers and is successful. It has been allotted to me to present tonight the subject of the marketing of fruits from the fruitgrower's standpoint. In all that I have to say I

hope that you who are representing the transportation and banking and commercial interests of this city, and of the state, will not take my remarks in a spirit of unkind criticism. If I state certain thoughts that exist in the mind of the fruitgrower of Oregon concerning the question of marketing his fruit, and your relationship to it, I hope you will not take them unkindly. It is all meant with a spirit of the best will and for the common good.

First, I want to say that the City of Portland has done a splendid work in many directions. This club has made a name almost throughout the world by its great work of boosting Oregon and presenting Oregon with all its splendid resources to the modern world. Perhaps there is no organization existing that has done better or more successful work than the Commercial Club of the City of Portland in this direction. The business men of Portland have been particularly good and kind and generous in the matter of furnishing credit generally to the merchants of this state. I know whereof I speak when I tell you that perhaps there is no place where good business men have received more kind consideration and extension of credit and a helpful hand than that given by the

business men of Portland to the business interests of the Northwest generally. It has been my pleasure and fortune to have received much of that benefit, and I have enjoyed greatly my associations in years gone by with that splendid spirit and good credit and fellow feeling coming from the business

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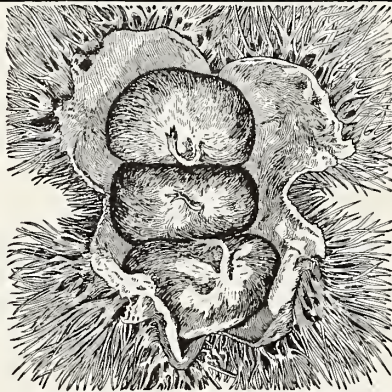
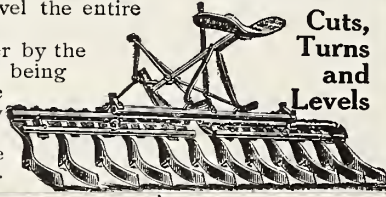
The manure or trash turned under by the plow is thoroughly mixed without being torn out. A fine mulch is left on the surface to hold the moisture. Only one tool needed after the plow.

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To STRAWBERRY GROWERS

Here's How One Grower Increased His Yield of Strawberries 50 per cent

His name is Ed. Winters and has quite a strawberry patch at Hood River, Oregon, noted for its famous quality fruit. "The test of Beaver Brand 'D' Animal Fertilizer was very satisfactory," writes Mr. Winters. "It strengthened the fruit stems, keeping the fruit off the ground and made the fruit larger and brighter. It increased the yield on the test rows 50 per cent, the second crop ripening with the first."

Beaver Brand Animal Fertilizers

come in different grades—depending upon what you grow. Strawberries are a quick fruit. While they are in the market, they bring good prices. Its up to you to grow as many and as big ones as you can. Beaver Brand "D" Animal Fertilizer will help you do it. It possesses the necessary plant food elements to feed your strawberry plants. What it is doing for Ed. Winters, it will do for you. Send now for fertilizer booklet 37. It is full of information you should know.

Union Meat Co.
North Portland, Oregon



men of Portland. It is one of the cherished memories of my life.

But I want to say that conditions have changed somewhat from what they used to be. We used to make friends of the commission men in the City of Portland. We knew the commission men; we used to get good returns from them. I used to ship through commission firms in Portland and they treated me very well, and I made money by it. The business men and bankers formerly extended their

credit and their help to the fruit-growing interests through the commission men of Portland. Times has made necessary many alterations in the problem of the marketing of fruits in the Northwest and in all the world. I feel that the business men and bankers of this state have not yet fully realized the change that has taken place. You have not grasped the conditions existing today—that the building up of the co-operative associations throughout the state is the fundamental and essential

problem in the marketing of fruits. I fear that you have not extended to these organizations that spirit of good will which you formerly gave to the commission men of the state.

I fear that you fail to grasp this change which has come about, and if you have failed to aid these organizations it is due perhaps to your lack of understanding of these changed conditions. But I want to say to you, to the business men of Portland particularly, that the time has come when you must take hold of these fundamental co-operative organizations throughout the state, offer them support and encourage them in every way. It is absolutely essential for the fruit interests of this state that the business interests come to the support of the co-operative organizations. As I say, you have done splendid work in boosting the Northwest, but it is now your duty to turn your attention to the marketing problem, to new methods of marketing fruits and products of the Northwest. If the City of Portland has any function to perform today that function is primarily to aid in the marketing of the products of Oregon and of the Northwest. If you the business men, and banking interests of Portland particularly, cannot find ways to do that then you are missing your functions. The primary function of this great city is to assist in the marketing of the products of this country.

We, the growers of fruit, are trying to do all we can to produce good fruit and to establish organizations of a co-operative nature to standardize those products. But we cannot finance them; that is up to you. Let me tell you what these organizations are doing. In Eugene they have a fruitgrowers' organization that markets in the fresh state the products of 300 to 400 members in that locality. What they can't market in the fresh state they dry or can. They have by years of careful attention to their business and study of the indus-

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Have for the coming season a very complete line of

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Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit.

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try built up a successful organization. We know the problem with them today is financing and carrying out the extensions that are necessary for marketing their products. Let me give you a list of the shipments from the Eugene cannery this year. The following is the output for the year: Dried prunes, 1,250,000 lbs.; rhubarb, 22,600 lbs.; gooseberries, 15,800 lbs.; strawberries, 168,000 lbs.; pie cherries, 10,400 lbs.; Royal Ann cherries, 126,000 lbs.; red raspberries, 62,700 lbs.; loganberries, 178,000 lbs.; beets, 31,000 lbs.; Blackcap raspberries, 45,000 lbs.; blackberries, 57,800 lbs.; black cherries, 9,000 lbs.; string beans, 15,000 lbs.; dills, 150 lbs.; cucumbers, 3,700 lbs.; Bartlett pears,

330,000 lbs.; tomatoes, 85,400 lbs.; Silver prunes, 18,000 lbs.; pumpkin, 300,000 lbs.; cabbage, 21,000 lbs.; cider apples, 86,000 lbs.; canning apples, 88,000 lbs.; shipping apples, 10 cars. Please observe the diversity of these products. The producers at Eugene went into this business because they couldn't market their products. What did the gentleman of the Corvallis cannery tell us was their experience? Mr. Tinker said that they went into the cannery business because they could do nothing individually toward marketing their fruit. They had to go into an association for canning and marketing. The same conditions exist all over this country. I want to say there is room for one hundred such institutions as the ones at Eugene, at Corvallis and at Forest Grove. In Western Oregon we could raise Bartlett pears enough to supply the world, and we ought to do it. There is no place in the world that can raise as fine Bartlett pears as cheaply as we can do it here.

How do these people at Eugene finance their institution? Well, when they organized at Eugene the organizers put their names on a paper and went to the bank as individuals to get money to start that institution. When do the growers get their returns? After the products are sold. The growers have to grow the product, get it canned or dried, and then wait for their returns until sold. Is that wise business management? Do not these institutions need your help, need your attention, need your interest? Is it not time for the City of Portland to heed these things and take active interest in helping these organizations in every way possible to put them on a large and successful paying basis? The interests of the fruit industry and of the business

men of the City of Portland are inseparable. We want your help and encouragement. We want you to say, "You are on the right track." We want you to say that this quality and standard of goods are the ones we want and we will try to produce that type and standard, but we want your help fur-

10 Good Size Packets SEED

Northern Grown, Thoroughly Tested, Reliable, Fresh, the "Sure Grow" kind, worth \$1.00. Cost you no money and



—you get all the seed you need without money. Will also send our Vegetable and Field Bargain Seed list C. Write tonight. **Shorewood Farms Co., Saugatuck, Mich**

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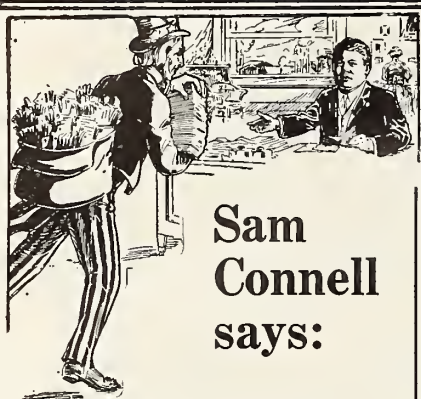
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**Mill Material—
Doors, Sash,
Everything
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Write us in your own language;
we have an interpreter.

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Portland, Oregon**

ther in marketing them. We want your help in carrying still further the spirit that is so absolutely necessary to the interests of this country—the spirit of co-operative associations. Get away from the old idea of individualism, of individual commission men. That day has gone by. You must get your minds in line with the greater thought of the new movement of co-operation, and get behind us and help us to work things out on that line or we can't do it. That is our fundamental problem, in which we ask your aid.

I had the pleasure the other day of an invitation to lunch at the Rotary Club, where I listened to one of the most interesting arguments from a cultured gentleman that I have heard for some time; a gentleman of faultless delivery and polished address. It was scholarly and I was delighted with the construction of his argument, but I was not pleased with the idea it conveyed, the idea that the agricultural problem in this country was due to lack of men on the land. Too long has the greatest effort been made to put men on the land, but little has been done to help them make a success after they got there. It is not men on the land today that we lack. There are more men on the land today than can possibly succeed. Men of good intelligence, of ordinary energy and of ordinary ability can't possibly succeed under existing conditions. Gentlemen, what the State of Oregon needs is to market the products they are producing here now. What of the apples, of the cabbage, of the potatoes, of the onions? Thousands of dollars representing the energy, the hard work, the skill and the money of the producers of this country went for naught last year. The potatoes last year should have been put into starch or alcohol, and not wasted. Gentlemen, it is up to the City of Portland. The function of the City of Portland is plain to the growers of the produce. You must find some method, you must get some scheme to help us out and make a market for these products. Here at your doors are carloads of fruit rotting that should go into by-products. It won't do, gentlemen. We can't afford to let the fruit that will be raised on the millions of trees that will be soon in bearing rot as it has in the past. The City of Portland can't afford to let it rot. It is your business as much as it is our business. You must help us.

I wish for a moment to refer to what Ireland has done in recent years. It has been lifted from the depths of despond to the heights of prosperity in agriculture not entirely because the farmers got the land. In years gone by the land was held in large tracts. The government made arrangements whereby the land was allotted to the government by sale and the government sold it to individuals. The cause of the present prosperity of Ireland is due primarily to the desire of the people for the land. They had to have it, but the man who did the real work of uplift was Sir Horace Plunkett, the man who has done more for Ireland than any living man,

RELIABILITY IN SPRAYING MATERIALS

You want to know positively that any spraying material you buy will absolutely do the work—is properly mixed, contains the right elements and in the correct proportions.

Reliability and efficiency in spraying materials is the chief merit of all sold by this company. Expert chemists are employed under the direction of men who know orchard conditions, to make the best and second to none.

Mr. S. W. Foster, formerly entomologist of the United States Department of Agriculture, is the expert who analyzes orchard conditions. His services are free to you whether you buy materials from this company or not.

You can ask any question that you would like to have an expert opinion on and you will get a straight-forward truthful answer.

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to combat all kinds of insect troubles and fungous diseases.

Do your dormant spraying now before the new buds open in the spring.

This is important.

You shouldn't overlook it.

A little care and expense now will make dollars for you when you harvest your crop.

Special spray materials are made for special troubles and special localities.

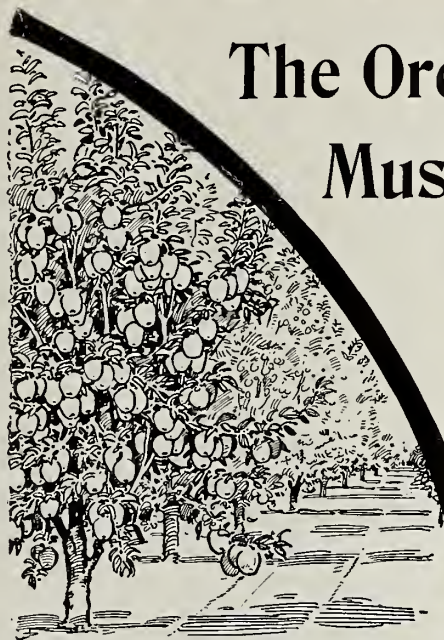
Tell your troubles to Mr. Foster in a letter and he will give you a personal answer by letter.

Send for Special Information Blank B. F.

You can fill this out and get a complete idea of the condition of your orchard. This blank will explain your troubles to Mr. Foster and he will tell you specifically just what you ought to do and how you ought to do it. You cannot overlook anything if you fill out this blank.

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The Orchard and Vineyard Must Be Fed as Well as Sprayed



Money in fruit-raising comes from the production of steady crops of first grades



Do not expect either orchard or vineyard to produce its best if you depend entirely on the natural sources of plant food in the soil. Especially must you keep up the supply of

POTASH

for on it depend in greatest measure the quantity, size, color, flavor and shipping quality that give fruit its market value. In fruit-raising, as in all farming, it is easily demonstrated that **Potash Pays**.

Peaches and small fruits that have received the right amounts of potash and phosphoric acid ship better, taste better and are better. At the time of the first cultivation, broadcast 300 pounds acid phosphate and 100 pounds muriate of potash per acre in the apple and pear orchard (150 pounds muriate in the peach orchard).

On citrus fruits or pineapples use sulfate of potash or 200 pounds double manure salt.

Some of the finest flavored strawberries and peaches are poor shippers, especially when barnyard manure is used as a fertilizer. Correct mineral fertilization will often make them firm enough to ship.

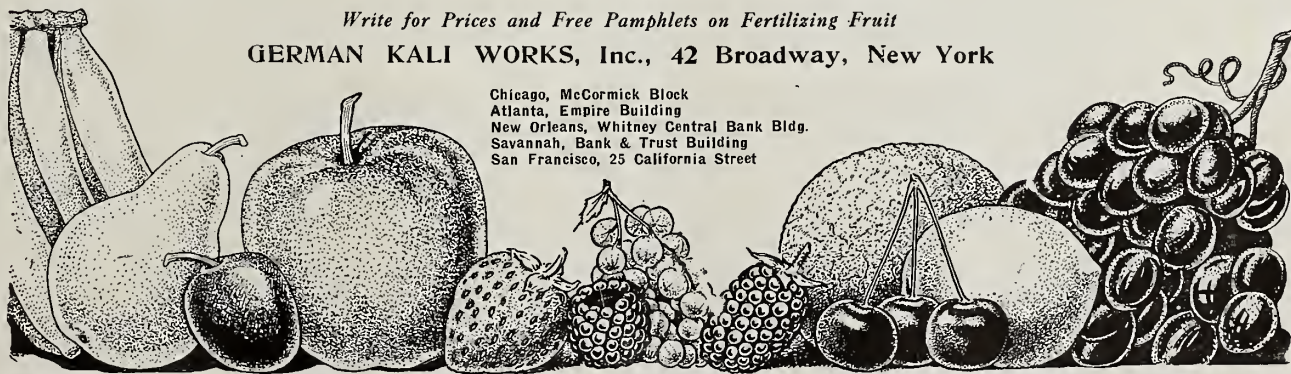
The nitrogen needs of the fruit can be learned by observing the amount of wood or vine growth. Manure alone is not the best or cheapest fruit fertilizer.

We sell potash in any quantity from one 200-pound bag up.

Write for Prices and Free Pamphlets on Fertilizing Fruit

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Chicago, McCormick Block
Atlanta, Empire Building
New Orleans, Whitney Central Bank Bldg.
Savannah, Bank & Trust Building
San Francisco, 25 California Street



or any man since St. Patrick. How did he do it? Sir Horace Plunkett organized what is known as the Irish Agricultural Association, which for twenty years has hammered away on the thought of co-operative associa-

tions, and he has had splendid support and assistance given him by the banking and wealthy people. At first thought we would think that the only thing to do was to give the land to the people, but in their condition at that time it

would not have done them any good. The people from Denmark had gone into Ireland and were selling them the butter they used, and their eggs, which they ought to have produced. They were selling them these farm products

Made in Five Sizes

[illegible]

Los Angeles

Let me give you one point that I observed in Ireland again. The City of Belfast has a population of 250,000 people. It has the largest rope works in the world; it has the largest gingerale manufactory in the world; it has the largest ship-building plant in the world, greatest linen manufacturing plant in the world and the largest tobacco manufacturing plant in the world. But, gentlemen, let me point out to you this fact. They do not grow one ounce of the tobacco which they work up in their factories. To keep that great plant going they send to other parts of the world for the tobacco and import it. They do not grow the hemp that they use in their rope manufacturing plant. It is grown in other parts of the world and carried there in ships and

manufactured and then sent out to the various countries of the earth. They do not grow much of the flax out of which the linen is made. It is grown largely in Belgium and Russia, brought to Belfast and manufactured into the finest linens and sent out over the world. They do not even grow the food to feed the people who work in their factories. They have no coal and they have little iron. They have none of the natural resources upon which to build up those great industries and yet they have the greatest industries of their kind in the world. Why? Because they have men who grasped and understood the methods of how to carry on these industries in the most profitable manner, and they have concentrated their energies on those methods necessary to their industries and have made a splendid success. It seemed to me very strange as I looked at the great city and saw the vast army of working people there, and the splendid success of those industries, that such a condition as that should exist with no natural advantages at all. I want to say to you, gentlemen, that as I looked over that great industrial life I thought if the City of Portland had the skill and industry exemplified by the City of Belfast, joined with our splendid natural resources, what a blessing it would be. Belfast has no water power at all. Look at the water power of our great state, flowing almost wholly unchecked to the sea. Look at the grand timber resources of our country. Look at the splendid horticultural interests that we have here and the great opportunities still waiting in that line. Look at the great opportunities for building up the farms. There is no place in the world where all food products can be laid down on the sea cheaper than they can be laid down in the City of Portland.

There is no place in the world that has such a vast array of resources of natural wealth as we have here, combined with great water power, and the splendid seaport that we have on the Columbia River. It is a wonderful opportunity. With all these varied and diversified resources at our hand, if we can only use them wisely and well, there is no question in my mind that Portland will be one of the greatest cities of the world. The time has come when the Panama Canal is going to open to the products of Oregon the markets of the world, and it is time that we should awaken to the necessity of turning our thoughts and attention to the problem of marketing the products of this great Northwest.

One fruit grower, who has ten acres of orchard, realized \$350 in one year from the sale of poultry, eggs and vegetables, not counting what his own family consumed of these commodities. This is a pretty strong illustration of the value of diversity for the fruit grower. He did this without any extra help and without interfering with or neglecting the care of his orchard.

Fruit Tree Stocks

Foreign and Domestic

Pear Seedlings—French (American-Grown and Imported)

Apple Seedlings—American-Grown and Imported, straight or branched for grafting or budding

Paradise

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by planting the new and improved varieties we offer. They have been grown and tested under our direct supervision by careful, intelligent selection.

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are tested seeds. They are above the standards of the pure seed laws. Our seed laboratory is in charge of a certified seed analyst, and we are the only seed company maintaining a seed laboratory in Oregon.

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A reliable and trustworthy reference of vital interest to every grower and

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JUDICIOUS SPRAYING IS AN EFFECTIVE FRUIT INSURANCE

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POWERS-WEIGHTMAN-ROSENCARTEN CO.

Manufacturing Chemists
Founded 1818

NEW YORK PHILADELPHIA SAINT LOUIS

Apple Market Investigations

Read at Sixth National Apple Show, Spokane, by Hector McPherson

DURING the period intervening between the meeting of the First National Conference on Credits and Marketing and the sailing of the American commission to investigate agricultural conditions in Europe, the writer spent two weeks studying market conditions for farm produce in Chicago. The most serious problem of the Northwest at that time was the marketing of the 1912 apple crop, and consequently the

time was almost entirely spent among the commission men and wholesale buyers of South Water Street, who make a specialty of Western apples. Under "Western apples" the Chicago buyer includes all those shipped from points in California, Oregon, Washington, Idaho, Colorado, Montana, Utah and New Mexico. Apples from these states reach Chicago in boxes, to be distributed to the retail trade through wholesale buyers, jobbers and commission men.

Early last spring wholesale prices in South Water Street were ranging all the way from 90 cents to \$2.00 a box, depending on grade and variety. Commission men and wholesalers and jobbers were handling these apples at from 5 per cent to 10 per cent profit to themselves. The retailer was selling the same apples at prices ranging from \$1.25 to \$2.50 a box. But only about 15 per cent of our Western apples are sold in box lots. The other 85 per cent are sold by the piece, by the dozen, by the pound and in small baskets put up by the grocer. On these the retailer demands a much higher profit. The most reliable estimates placed the profit of the retail dealer in Western apples from 75 to 150 per cent.

The main cause of last year's hard times for apple growers is now a matter of history, and is known to every intelligent grower in the Northwest. Here it is in a nutshell: According to reports of the International Apple Shippers' Association it is estimated that 8,283,645 boxes of Western apples and 4,645,412 barrels of Eastern apples had reached storage by January 1, 1913. This represented an increase of 3,349,641 boxes, and 751,088 barrels over last year's crop. The enormous increase was in Western boxed apples; and the simple matter of fact is that the public could not afford to consume the increase at the high retail prices asked.

Now, the pertinent question to ask is, How can we prevent the recurrence of such a disaster as almost overwhelmed our Western fruit men last year? In answer to this question, the first point to be considered is the competition of Eastern barreled apples and how to meet it. The area planted to apples in

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Consulting Horticulturist
J. F. LITTOOY
Directs Orchard Development
Expert on Data for Litigation
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Grown without irrigation.
Unexcelled quality—Will grow.
Apples, Peaches, Pears and Prunes of every variety.
Lewis Apricots, 1-year, 4 to 6 feet. These trees are hardy, strong and well rooted.

Special Prices on Request

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PORTLAND, OREGON **C. A. EPPERSON**

YOU WANT THE BEST SPRAYER

 You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

Write for Catalogue #6
REIERSON MACHINERY CO.
Manufacturers 182 Morrison St., Portland, Ore.

We Want Salesmen

To increase our sales force at once we offer extra liberal contracts to energetic men of good habits and appearance, 21 to 50 years old, who can furnish good references. Pleasant, profitable, all-year-round work. You are your own boss but operate on our capital. No experience needed. We give you thorough course in salesmanship free. Work grows easier and profits better every month. Our men clear \$50 to \$200 per month above expenses. Fine territory now open in your state. Old established, well-known company—big line. Write at once for particulars.

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Best for windbreaks. Protect crops and stock. Keep house and barn warmer—save fuel—save feed. Hill's evergreens are hardy, nursery-grown—low priced. Get Hill's free illustrated evergreen book and list of Great Bargain Offers— from \$4.50 up per Thousand. 56 years experience. World's largest growers. Write. **D. HILL NURSERY CO., Inc.** Evergreen Specialists. 287 Cedar St., Dundee, Ills.



Protect Your Trees

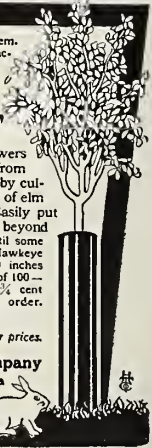
DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

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Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—1/4 cent apiece. Special sizes made to order. Write for circular and samples.

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NO MORE If you want a cheap and safe method for keeping **RABBITS** and **BORERS** out of your orchard, paint your trees with "SULFOCID" the new concentrated sulphur compound. Easy to prepare and apply. One application lasts one year. "SULFOCID" solves the rabbit problem. Write today for booklet, "SULFOCID, Sure Protection from rabbits and borers." Address B.G. Pratt Co., 50 Church St., N.Y.



the Northwest is increasing year by year. There is also a deep-seated conviction that the flavor of the Eastern apple is superior to that of the West; that while our apples are almost incomparably better in appearance, their superiority is only skin deep. Whether it be true or not, this belief exists and must be reckoned with. However, I found that it was universally conceded that any real or imagined disadvantage in flavor was much more than offset by the superior size, shape, color and pack of our Western orchard product. Moreover, the best informed apple men claim that the output of the Northwest is not keeping pace with the increase in area. In the Middle States the area is actually on the wane. In Illinois, Missouri, Iowa, Arkansas, Nebraska and Kansas there were 10,000,000 fewer bearing trees at the beginning of this season than three years ago. Such facts as these offer some encouragement to the Western grower. But over against them we must place the rapid expansion of our Western apple orchards. As one passes through our apple growing districts and notes the millions of young trees soon to come into bearing he begins to realize that the 1912 apple crop is a small affair as compared with that which must be marketed a few years hence.

Against whatever advantage the West may have over the East as an apple producing country must be reckoned the certain handicap of long hauls and high freight rates. At the opening of the marketing season of 1912-13 Eastern barreled apples averaged \$2.00 a barrel at shipping points, and were landed in cold storage at an average of 25 cents extra per barrel. At the same time, Western apples were bringing from 60 cents to \$1.50 per box f.o.b. shipping points, and cost 50 cents a box freight to Eastern cold storage centers. This brought the cost to wholesale dealers up to the rate of \$3.65 to \$6.65 a barrel for Western apples, as compared with an average of \$2.25 for the Eastern fruit. Now, the plain English of the situation is that our \$3.65 apples were not as good fruit as the \$2.25 Eastern apples with which they came into competition. I went about and sampled dozens of boxes of our lower grades and cheaper varieties that were exposed for sale alongside of Eastern barreled apples. I have pages of my notebook filled with names of shipping associations and growers' numbers copied from Western boxes in South Water Street and the retail grocery stores and fruit stands of Chicago. The fact is that many of these apples should never have been shipped East at all. They should have been consumed in a by-products plant at home, or fed to the hogs. As it was, they were simply killing the market for the better grades of our standard varieties. On the basis of freight rates as well as of quality they were hopelessly outclassed by the Eastern varieties alongside of them. Of course the handicap in freight rates will be considerably minimized by the opening of the Panama Canal. The

FOR USE
IN ANY
WAGON,
CART, Etc.



No. 190
Horizontal
50-gallon

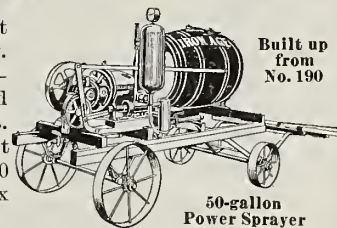
THE RIGHT KIND OF SPRAYER

Means the one that just fits your purpose. You need to consider capacity, pump, engine, pressure, mixing, straining sediment, stability on hillsides, using your own wagon, engine or sprayer with balance of the outfit to fit what you already have. Get the right sprayer for YOUR work and you won't have any cause to be dissatisfied. We show here but three of the 70.

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They are built up in units so that you can buy what you need now and add to the outfit later if necessary. All have the best pumps in use on any sprayers—least slippage among eight of the best in a disinterested test. Solutions touch only brass or galvanized parts. Hemp packing, bronze ball valves, both easy to get at. Pumps outside. Power sprayers are 50, 100, 150 or 200 gallons capacity. 200 pounds pressure with six to eight nozzles.



Built up
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No. 190

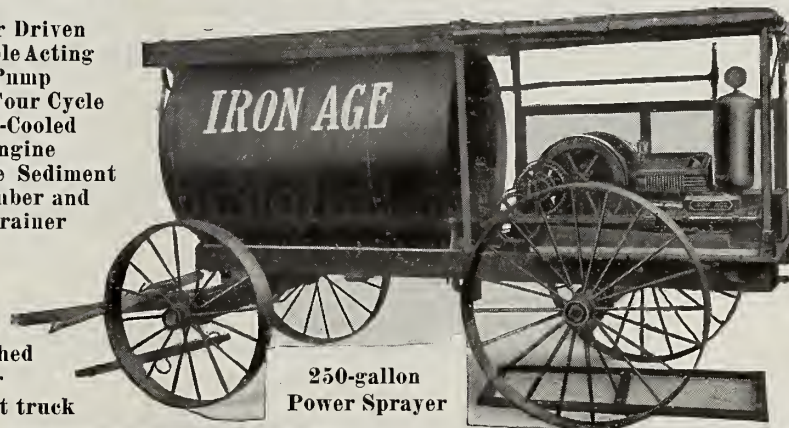
50-gallon
Power Sprayer

Ask your local dealer about this line and write us for our new "Spray" book, spray information and copy of Iron Age Farm and Garden News.

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Gear Driven
Double Acting
Pump
2 H. Four Cycle
Air-Cooled
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Outside Sediment
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Strainer



Furnished
with or
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250-gallon
Power Sprayer

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Royal Ann, Bing and Lambert cherry trees; Spitzenberg and Newtown apple trees; Bartlett, Anjou and Comice pears, and other varieties of fruit trees.

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Milton Nursery Co.

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**Special Attention to Commercial Orchard Stock in
Pear, Cherry, Apple, Prune**

You can buy cheaper trees for less money
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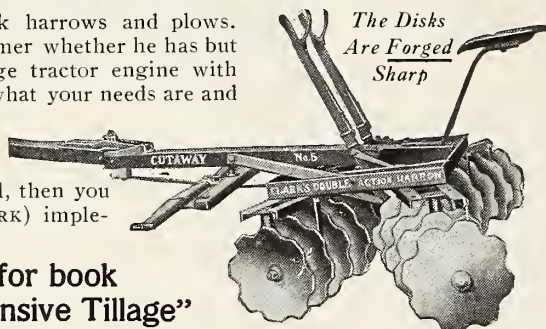
(CLARK)

Work Up the Soil Finer than Other Harrows and Are Lighter Draft

For more than a quarter century we have been making CUTAWAY (CLARK) disk harrows for men who want to till their land more thoroughly, more intensively, than is generally practised. Today CUTAWAY (CLARK) implements are the standard of real worth. They are constructed with utter disregard of the designs followed by makers of other disk harrows. They are built to pulverize the soil finer than other harrows will do, and to do it without increasing the draft. We make

OVER 100 STYLES AND SIZES

of CUTAWAY (CLARK) disk harrows and plows. We have one for every farmer whether he has but one small horse or a large tractor engine with which to pull it. Tell us what your needs are and we will tell you about the tool best adapted for them. If you believe in more intensive tillage of the soil, then you believe in CUTAWAY (CLARK) implements.



Write today for book
"The Soil and Intensive Tillage"

Our booklet, "The Soil and Intensive Tillage," illustrates CUTAWAY (CLARK) tools and contains ten pages of valuable information on the soil—its chemical and physical properties—the feeding of plants, and intensive tillage. There is also an article by Professor G. B. Upton of Cornell University on the CUTAWAY (CLARK) Forged-edge Disk.

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Maker of the original CLARK disk harrows and plows

FOR BEST RESULTS USE OUR Filtered Lime-Sulphur Solution

(EVERY DROP USABLE)

AND

Neutral Lead Arsenate

MADE IN OREGON

WRITE US FOR PRICES

Oregon Arsenical Spray Co.

J. C. BUTCHER, Proprietor

CLACKAMAS, OREGON

COLD STORAGE

is the best way of keeping fruit—everybody knows that. The Cooper Systems are the best method of applying cold storage, and those who are using these systems know it, too. Circulation of the air, purity of the air and humidity or moisture content of the air, is under control at all times. Write us for descriptive matter, estimates and suggestions. We have been in the perishable goods and cold storage business for twenty-five years.

MADISON COOPER COMPANY

130 COURT STREET

CALCIUM, NEW YORK

Refrigerating Engineers and Architects

reduction in rates will affect mainly our foreign trade and those hauls which lie between points near tide water on the Pacific and places similarly situated on the Atlantic. Where the growing point is located at a considerable distance inland on the Pacific Coast, and the market necessitates an inland haul from the Atlantic port, we cannot hope for very great advantage from the Panama route.

The question of railway freight rates is still regarded by many of the large Eastern dealers as an open one. I found the big Chicago firms especially bitter against the existing blanket rate of \$1.00 a hundred to all Eastern points. The denounced it as unfair and favor a zone system of freight rates on Western fruits shipped east of the Missouri River. They advocate a rate of sixty cents a hundred on apples consigned to such points as Kansas City, Omaha and St. Paul. On this basis they would graduate their system of rates at say 75 cents a hundred to Chicago, 85 cents to Detroit, \$1.00 to New York, and perhaps \$1.15 to points in the extreme Southeast. On the face of it some such system would appear to have reason back of it. But we must concede that, in the influence they wield, our railways are public utilities in the fullest sense of the term. Like all other public utilities, they should be run on the basis of the greatest good to the greatest number. The fact is that under present conditions it is impossible to say conclusively what rates are too high and what are too low. When the physical plants of all the roads in the United States have been appraised as those in Wisconsin have already been we shall have made the first step toward a basis of scientific rate making. Even then the problem will be complicated by questions of social welfare and by the almost unsolvable problem of railroad transportation cost accounting.

Now it seems to me that we are in a position to lay down a few simple facts which the Western grower must be ready to face if he is not to plunge blindly into worse experiences than that of last year. In the first place he must be prepared for competition, and that a growing one, from the orchards of the Northeast. In the second place, owing to the millions of young trees which will soon be pouring their additional product into our packing sheds, the Western apple men must be prepared to market crops in future very much greater than that under which he floundered in 1912. Again, the Western orchardist can never hope to attain a position of equality with the Eastern grower in the matter of freight rates. Hence he must learn that it is only in certain varieties, and in the best grades of those varieties, that he can hope to cope successfully with his Eastern competitor.

How, then, is he to make the best of the situation in which he finds himself? First, as to variety, the West is growing over one hundred varieties of apples, sixty-five of these in sufficient quantities to be shipped in carlots.

Eastern dealers are unanimous in recommending that commercial orchardists confine themselves to a few standard varieties. They mention the Winesap, Stayman Winesap, Newtown Pippin, Delicious, Spitzenberg, Rome Beauty, Ortley, White Winter Pearmain, Black Ben Davis, Gano, Arkansas Black, Jonathan, Grimes Golden, Winter Banana and McIntosh Red. They recommend that the grower choose some of these as are best suited to his local conditions and graft over all old trees to his standard varieties.

On the question of grade the wholesale dealer is just as emphatic. He says that only our two best grades, fancy and extra fancy, should be shipped East. All others simply tend to displace and lower the price on these best grades. They should be sold at home for what they will bring or utilized in a cannery, dryer or vinegar and cider plant. On this latter point, I believe the generalization may be a little extreme. Much will depend on the crop, on the condition of the market, and also on the thoroughness with which the growers are organized.

If the fruitmen were strongly enough organized to establish their own systems of cold storage, canneries, dryers and vinegar and cider plants the risk in handling the lower grades of fruit would be reduced to a minimum. An efficient system of market reports at the service of the large organization would indicate the proper disposal of the lower grades. In fact almost everything depends upon organization. Many of the most far-sighted wholesale men of the East said to me in effect: "Unless you Western apple men can get together after some such pattern as the

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with the ACME Foot Lift Weeder. It gets all the weeds the easiest way possible. The long knives cut the entire surface and leave it covered with a moisture holding mulch. Made entirely of steel, indestructible. Below we reproduce a full size section of the steel used in Acme Weeder Blades. Ask your John Deere dealer about the ACME.

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We offer for the coming season the most complete and best selected stock of both FRUIT AND ORNAMENTAL TREES in the country. If you want home grown, first-class stock, handled under closest observation of all details which long experience alone can teach, you are the man we want to supply. Write today for prices or see our representative in your section.

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Three splendid trains daily between Portland, Seattle, Tacoma, Spokane, and Minneapolis-St. Paul. Two of these trains run through to Chicago; thus affording double daily train service to Chicago on a 72-hour schedule.

Our trains are protected with modern safety appliances—many miles are double tracked. Pullman Sleeping Cars, Leather Upholstered Tourist Sleeping Cars, Parlor Cars, Parlor Observation Cars, Cafe Cars, Dining Cars and Coaches. Our equipment is consistently arranged to afford the maximum of comfort to travelers.

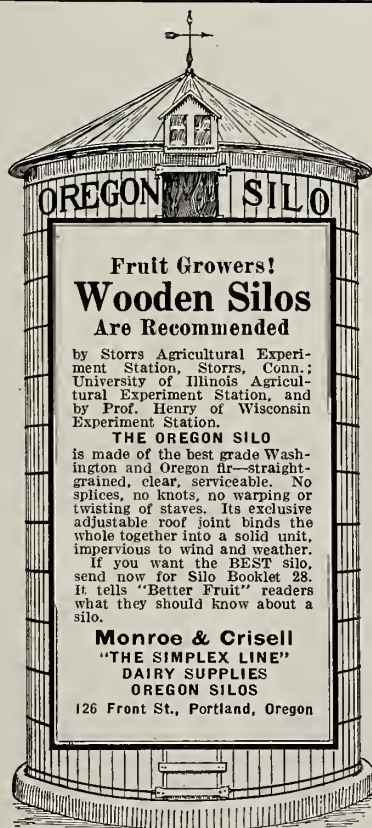
Attention is being directed to specially arranged train service for
"HOME-COMING" to NORWAY, June, 1914

Literature descriptive of territory served by our line, or of our train service, mailed free to anyone.

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Assistant General Passenger Agent, PORTLAND, OREGON

NORTHERN PACIFIC RAILWAY



Fruit Growers! Wooden Silos Are Recommended

by Storrs Agricultural Experiment Station, Storrs, Conn.; University of Illinois Agricultural Experiment Station, and by Prof. Henry of Wisconsin Experiment Station.

THE OREGON SILO

is made of the best grade Washington and Oregon fir—straight-grained, clear, serviceable. No splices, no knots, no warping or twisting of staves. Its exclusive adjustable roof joint binds the whole together into a solid unit, impervious to wind and weather.

If you want the BEST silo, send now for Silo Booklet 28. It tells "Better Fruit" readers what they should know about a silo.

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"THE SIMPLEX LINE"
DAIRY SUPPLIES
OREGON SILOS

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**Your Best Working Partners
Are a Pair of Helpful
Hansen's Gloves**

This "Glad Hand" Gauntlet is a fine example of how Hansen's Gloves are built to share your work and make it easy and fast.

Their perfect protection proves that rough work does not mean rough hands. It is also the truest economy—a saving in time, labor and hand-health. Price, \$1.25 up.

The 500 styles include the right glove for driving, motoring, cycling and all sports. For lighter chores, heavy work, threshing, lumbering, etc.

Specially tanned leather, cannot shrink or shrivel, harden, stiffen or peel. Easily cleaned in gasoline. Gloves for the boys, too. If your dealer is not a Hansen man, write us for book and full information.

O. C. Hansen Mfg. Co.
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Book Free



EVERYBODY LOVES FRUIT

EVERYBODY LIKES SOMETHING NEW

Mr. Planter: Get the latest wonder in fruit. An apple tree that bears ripening fruit from July until December. Any day you can gather ripe fruit and see apples in all stages on the tree. Delicious apples—good for eating and cooking—good for everything. Only a limited number of trees this year. No home complete without it. We paid \$600.00 for original tree.

Write for particulars.

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Tree delivered by Parcel Post at your house

Things We Are Agents For

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PORTLAND, OREGON

citrus fruits organizations you will run amuck over and over again. You want an organization which will control and standardize the product for the whole Northwest. Only such an organization can properly regulate the distribution of the product so as to place it where it is most needed and will command the highest price." Is such an organization possible? The answer lies on the face of the illuminated map which occupies the central position in this magnificent show. With the North Pacific Fruit Distributors occupying the field, as indicated on this map, with their 2,779 cars of fruit shipped and over a million and a quarter dollars in the pockets of the growers thus early in the season, it looks as if organization were already an accomplished fact.

There are problems still to be solved. A large percentage of growers have not yet grasped the principle of brotherhood and economic democracy underlying co-operation. I am convinced that only undying vigilance and an organized educational campaign will place the distributors upon the solid rock of assured success. Moreover, the grower can never be assured of his own while such conditions exist as are disclosed by an investigation of the retail trade of our large cities. Where the dealer who holds the fruit but a few days and passes it out over the counter receives more for his service than the man who plants, cultivates, prunes and sprays the orchard, harvests the crop and maintains his skill and vigilance through years of toil, there is something radically wrong with our system of distribution. This indeed is the supreme problem of the future, especially in years of exceptional yield. Last year, while apples went to waste by the thousands of boxes, there were millions of people in this country who did not even get an apple a week—many not even an apple a month—to say nothing of an apple a day as a means of keeping the doctor away. Such conditions ought not to exist in a country which has a right to call itself civilized.

The apple-consuming power of the American city, when prices are right, is indicated by an incident which occurred in Chicago last winter. The women's clubs of that city arose in brief but highly significant insurrection against the high cost of living. Among other things they went into the retailing of apples for a week. They purchased at regular wholesale prices and retailed at just sufficient advance to pay the cost of handling. As a result of this week's sale the people of Chicago consumed 20,000 more barrels of apples than they would have had the women's clubs not taken the matter in hand. On the solution of this problem of economical distribution the Old World affords us many useful limits.

The Walla Walla Fruit Distributors have shipped this year about 350 cars of fruit and vegetables. The shipment of winter apples consisted of about 150 cars.

GREAT CROPS OF STRAWBERRIES AND HOW TO GROW THEM

IS the title of a beautifully illustrated book of expert information written in every-day language by America's most successful strawberry grower. It explains how the Kellogg Pedigree plants are grown on the great Kellogg plant farms in Oregon, Idaho and Michigan. It contains pictures of the best varieties of strawberries, including fall-bearing kinds, and gives full descriptions. It tells how to grow big crops of fancy berries, and how to market them at big prices. Explains in detail The Kellogg Way.

OUR FAMILY STRAWBERRY GARDEN

Whether you have a small garden only or a big farm, you should grow your own strawberries. Kellogg's Big Red Strawberry Garden will produce all the delicious strawberries your entire family can eat, summer and winter. You can have shortcake, strawberries and cream, preserves, jam and canned berries, the year 'round for less than one cent per gallon. Our Book gives full information.

Strawberries

yield more dollars per acre and give quicker returns than any other crop. Set one acre to Kellogg's Pedigree plants this year, and put from \$500 to \$800 in the bank next year. Our Book tells you how. IT IS FREE.



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A PANORAMIC VIEW

of the

Famous Hood River Valley
showing

13,000 acres of apple orchards,
Mount Hood, Mount Adams and
the Columbia River Gorge.

40 inches long Price \$1.00

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Established 1847

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Harvey Bolster Springs
RACINE

prevent damage to eggs, garden truck, fruits or live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited. Thousands in use. "My wagon rides like auto" says one user.

MADE LIKE FINEST AUTO SPRINGS
Same principle—same care—same high-quality steel in Harvey Bolster Springs as in finest automobile springs. In resiliency, durability and appearance they cannot possibly be excelled. The Standard Springs of America since 1889. Get a pair at your dealers. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and list of proof free. HARVEY SPRING CO., 784 17th Street, Racine, Wis.

GUARANTEED

Spraying in Australia

Continued from last issue

Fungicides are materials used in destroying fungi, which are low forms of vegetable life causing disease in plants. Correctly speaking, the fungicide acts as a preventive of plant disease by obstructing the germination of the spores of the fungi causing such disease. These spores grow upon the exterior portion of plants. If we cover the plants with a coating of a copper salt, such as bluestone or other chemical injurious to the germination of the spore, the reproduction of the fungi is held in check. Insecticides are those substances used in destroying insects. The materials used in spraying are divided into two classes, the internal poisons and the external contact irritants, known also as the internal and external contact insecticides. Internal poisons are only used for those insects that bite their food, and they kill because of their poisonous action. The external contact insecticides act by their penetrating and irritant qualities. These are used against all insects whose mouth parts are formed for sucking.

The principal fungicides used are as follows: Lime-sulphur solution, bordeaux mixture, ammonia-carbonate of copper. The principal insecticides, and those which have proved the most efficacious, are as follows: Arsenate of lead, internal poison, for leaf-sucking insects; bordeaux arsenical, combined insecticide and fungicide; kerosene emulsion, external contact irritant, for scale insects and plant lice; lime-sulphur wash, external contact irritant and fungicide, for scale insects and plant lice; resin wash, washing soda and tobacco solution, external contact irritant, for scale insects and plant lice, Fumigation—causes suffocation and death.

The particular outfit to be selected for spraying purposes will depend altogether upon the amount and character of the work to be done. Numerous pumps are made for the special work of spraying. A pump simple in construction is to be preferred. No one outfit can be expected to suit all the varying conditions of spraying. Hand pumps should give great pressure with the least expenditure of power. All

PAINT WITHOUT OIL

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather-proof, fireproof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

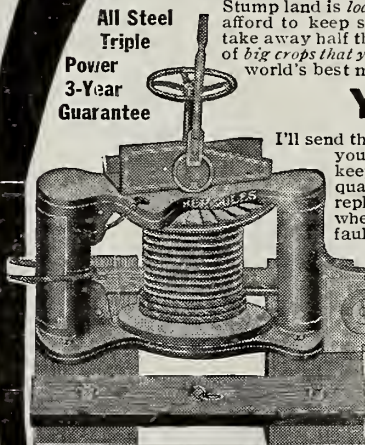
Write to Mr. A. L. Rice, manufacturer, 255 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

Get My Low Price On The Hercules Stump Pulker

SEND me your name if you have stumpy land, or even a few stumps in your fields. I want to make you a price that will save you at least 50% on the regular price of the famous Hercules! This is the best chance that you have ever had, to get rid of the stumps in the quickest, cheapest and best way.

Pull Out The Stumps!

All Steel
Triple
Power
3-Year
Guarantee



Stump land is *loser* land, *robber* land, *failure* land. You can't afford to keep stumps. They cost too much money. They take away half the realty value of your land—and they rob you of big crops that you don't get! Let me quote you my price on the world's best machine for clearing land.

You Take No Risk

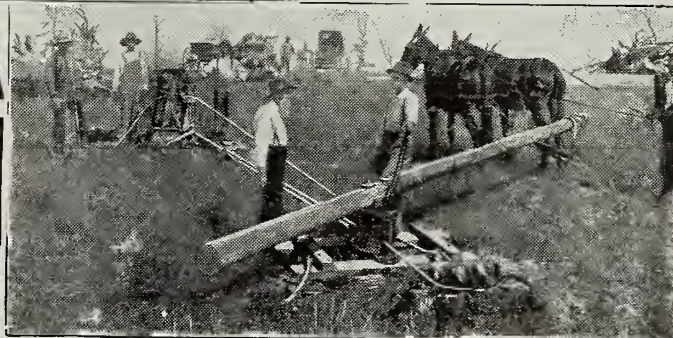
I'll send the Hercules on 30 days free trial—you to try it in your own way, on the stumps in your fields. If you keep it, you are still further protected by any unqualified 3 year guarantee which insures the free replacement of all broken castings for 3 full years, whether the broken castings are your fault or the fault of the machine!

Write Quick For Big Free Book

You will be glad you wrote. You'll be pleased with the photographs, letters and facts about the Hercules construction. My price will make it easy for you to own a Hercules. Nothing to be gained by waiting—much to be lost. Write me now while my special price offer holds good. Address me personally,

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Points to remember when consigning apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive Our Personal Attention
- 3.—The Fruit is Sold by Private Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

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They give the highest efficiency through long hard terms of service. There is an **Anti-Klog** of the right capacity for those who have much and those who have little spraying to do.

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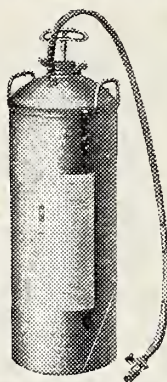
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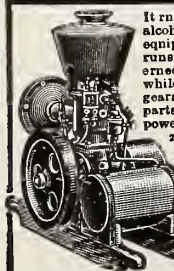
working parts should be made of brass and easily taken to pieces. No type of spraying outfit is more widely used or has given better satisfaction than the barrel pump. There are a great many different makes on the market, of which many are efficient and successful. They are mounted in a great many ways. An ordinary fifty-gallon whisky barrel forms an excellent and inexpensive tank for holding the spray. The pump, according to its design, may be inserted in the end or the side of the barrel. The barrel may be mounted, to suit the operator, on a slide or on two wheels, or it may be placed in a cart. Power pumps are coming into more general use, as they are more economical and do better work than the hand pumps.

Nothing contributes more to success in spraying operations than good hose and nozzles. In ordinary operations half-inch hose is generally used. Good three or four-ply hose should be bought. It never pays to use cheap hose in spraying, as they are subjected to a great deal of rough handling. Above all have plenty of length of hose when spraying—twenty-five to thirty at least should be used. The couplings should be of a style readily adjusted and everything must be kept tight to withstand pressure.

One of the most important parts of the whole apparatus is the nozzle. Good results in the application of the spray mainly depend upon its efficiency. For general use the best nozzle is the Vermorel or one of that type. The four most commonly used nozzles are as follows: The Vermorel nozzle undoubtedly throws the finest spray of any. It should be held quite near the foliage or branches, as the liquid is not thrown out with much force. The Bordeaux is a splendid type of nozzle. It has the advantage over all others in that the character of the spray is readily changed from a solid stream to a mist-like, fan-shaped spray. If there is any clogging of the nozzle it is easily remedied by turning the handle, thereby forcing out the obstruction with the pressure of the pump. The spray from the Cyclone is conical shaped, similar to the Vermorel. The Friend nozzle is coming largely into favor.

The ends of the hose should be attached to extension rods of suitable lengths for the work. For all lengths above six feet a bamboo extension rod is recommended. This consists of a

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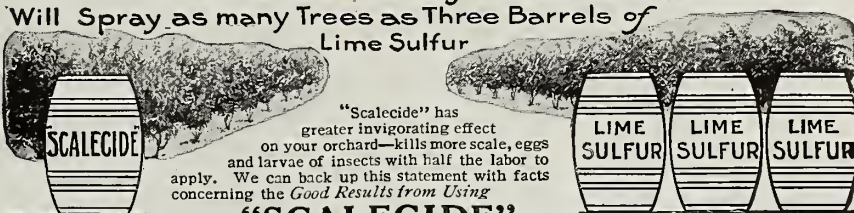
East Tenth and Pine Streets, PORTLAND, OREGON

small brass tube, supported by a bamboo rod. On the extension rod a tap is generally placed for turning the liquid on or off. For this a half-inch wheel valve is convenient. All pumps should be fitted with good agitators. The proper agitation or intermingling of the spray liquid is one of the chief features in spraying, and unless it is thoroughly done good results will not be obtained.

A spray pump, like any other machine, will do good work and last in proportion to its care. When a pump does not work perfectly the cause of the trouble should be ascertained at once and remedied, otherwise permanent damage may result. When a spray pump is first received its working parts should be carefully studied. After the pump has been used it should be thoroughly washed out with warm water, as most of the spraying mixtures are highly corrosive in their action. The hose should also be thoroughly washed out, and especially after using oil sprays. Always keep the barrel filled with water when not in use to prevent the wood from warping and hoops becoming loosened. With proper care the pump should last several years; the hose, however, will probably have to be replaced after one or two seasons.

The orchardist will do well to carefully consider the following points: Don't fail to spray every season. It is impossible to determine in advance whether or not the tree will be attacked. Proper spraying is never injurious. Don't fail to follow Spray Calendar and formulas. If you do not it would be better not to spray, as you are liable to do more damage than good. Don't wait till the fungi have attacked plant or tree; the fungicides are merely preventives and should be used early in the spring. After the disease has developed it may be too late to save the plant. Don't spray during or just after a shower, or when there has been a heavy dew. Much of the solution will be washed off or it will collect in spots. Wait till the leaves are dry. Poison is more effective when applied to the leaves when dry. Don't spray on top of the leaves only; spray the under sides where the pests hide, and be particular to keep you liquid thoroughly agitated. Don't give up spraying because you do not think you see any benefit from your work. Perhaps you did not spray early enough to prevent the damage; perhaps you did not use the right formula or were not careful in its preparation; perhaps you did not spray thoroughly or often enough. Try again. Don't buy a cheap sprayer. It will always be out of order. It will make the labor many times greater and in the end will cost more than a good

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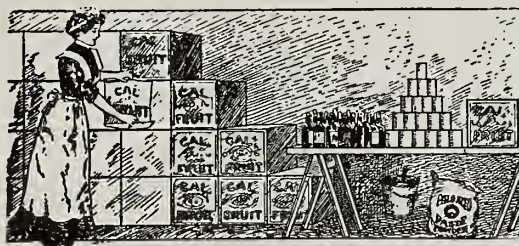
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10 choice varieties, all new, fresh seeds, sure to grow and bloom this season. Pansy, 60 Colors; Phlox, 10 Colors; Verbena, 18 Colors; Pinks, 12 Colors; Petunia, 10 Colors; Asters, 12 Colors; Poppy, 8 Colors; Stocks 10 Weeks, 8 Colors; Mignonette, mixed and Sweet Alyssum. The 10 Packages only 12c.

With each order we also include a copy of **GOOD POULTRY** a quarterly magazine, devoted to special crops and intensive farming, with special attention to the care and handling of poultry. Tells how to make \$300 per acre per year on any farm from 5 to 100 acres. Good Poultry alone, 10c a copy; 25c a year. Order now, write tonight—for Flower Seed Bargain List, A. **SHOREWOOD FARMS CO., Saugatuck, Mich.**

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one. Don't buy a bucket sprayer and expect to spray an orchard with it. Buy a sprayer large enough to do your work quickly and easily. Don't put your sprayer away after using it until you have thoroughly cleaned out all the spraying mixture. If this is left in, the pump will be injured and the glands and valves clogged. Don't start out to spray until you have carefully examined your sprayer to see that it is in good working order. Don't leave your sprayer where it will freeze unless all the liquid has been drained from it. If liquid has been frozen in the pump it is liable to break iron cylinders or expand brass cylinders so the pump will not work. Don't spray only the trees from which you expect to get marketable fruit. Spray all the trees, otherwise the trees you go to the trouble to spray early in the season may become infected later by the unsprayed trees. "An ounce of prevention is worth a pound of cure."

United States Department of Agriculture
Bureau of Statistics

Washington, D. C., Nov. 10, 1913.

The production of various products, expressed in percentages of a "full crop," in the past three years is estimated as follows, from reports of agents and correspondents of the Bureau of Statistics (Agricultural Forecasts):

Fruits	1913	1912	1911
Apples	44.6	69.9	62.4
Apricots (California)	61.0	80.0	75.0
Blackberries	74.6	71.5	67.8
Cantaloupes	78.1	79.8	78.0
Cranberries	70.0	78.7	70.9
Grapefruit (Florida)	80.0	105.0	57.0
Grapes	72.8	87.8	82.4
Lemons	65.0	95.1	91.4
Limes (Florida)	90.0	75.0	75.0
Oranges	82.2	102.0	84.2
Peaches	47.6	68.4	44.3
Pears	58.7	73.5	70.5
Pineapples (Florida)	88.0	92.0	75.0
Prunes (California)	63.0	88.0	80.0
Raspberries	72.9	77.4	71.5
Strawberries	73.6	89.2	68.7
Watermelons	75.7	80.6	80.2
Vegetables			
Beans (dry)	75.7	81.7	77.4
Beans (Lima)	76.5	83.2	78.2
Cabbages	71.2	90.6	73.0
Cauliflower (California)	90.0	90.0	...
Celery (California)	92.0	96.0	...
Onions	77.6	90.5	75.6
Tomatoes	77.0	85.3	76.9
Miscellaneous			
Alfalfa	83.3	94.2	86.6
Alfalfa seed	89.4	84.2	...
Almonds (California)	50.0	81.0	62.0
Broom corn	50.3	82.9	69.8
Clover hay	81.0	83.0	57.1
Clover seed	80.5	74.5	56.4
Hemp	55.0	77.0	65.0
Kaffir corn (grain)	52.8	156.2	77.8
Kaffir corn (forage)	55.1	88.6	78.7
Millet hay	61.8	86.0	71.3
Millet seed	62.1	80.2	64.4
Olives (California)	76.0	64.0	87.0
Peanuts	84.3	82.0	81.1
Sugar beets	89.0	101.0	100.3
Sugar cane	85.0	76.1	97.3
Walnuts (California)	77.0	86.0	80.0

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it.

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Another writes his machine will climb a tree. THERE IS MORE YOU SHOULD KNOW.

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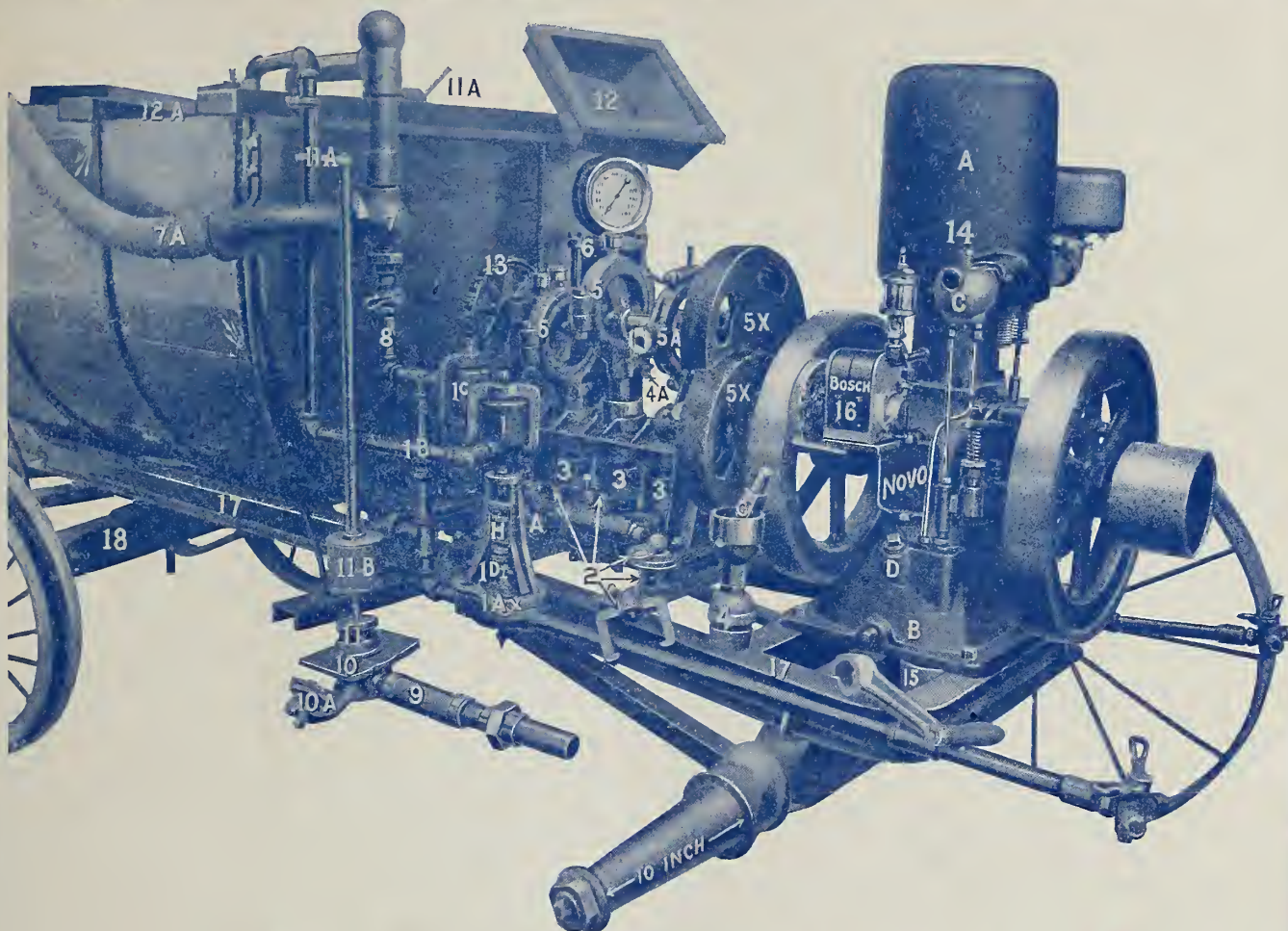
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The World